Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us | Equal Opportunity Employer

January 20, 2012

Legislative Reference Library
645 State Office Building
100 Constitution Avenue
St. Paul, MN 55155

RE: In The Matter of the Proposed Rules of the Minnesota Pollution Control Agency (MPCA) and the Minnesota Department of Health Relating To Water and Wastewater Treatment Certification, *Minnesota Rules*, 9400; Governor's Tracking AR503

Dear Librarian:

The Minnesota Pollution Control Agency (MPCA) and the Minnesota Department of Health (MDH) intend to adopt rules relating to Water and Wastewater Treatment Certification. We plan to publish a Dual Notice in the January 23, 2012, *State Register*.

The MPCA and MDH have prepared a Statement of Need and Reasonableness. As required by Minnesota Statutes, sections 14.131 and 14.23, the MPCA and MDH are sending the Library a copy of the Statement of Need and Reasonableness at the same time we are mailing our Dual Notice.

If you have questions, please contact me at 651-757-2527.

Sincerely,

Yolanda Letnes
Rule Coordinator
Policy, Local Government Assistance and Solid Waste Section
Municipal Division

YL:wgp

Enclosure: Statement of Need and Reasonableness

Minnesota Department of Health (MDH)
and
Minnesota Pollution Control Agency (MPCA)

STATEMENT OF NEED AND REASONABLENESS

Proposed Amendments to Rules Relating to Water and Wastewater Treatment Certification,
Minnesota Rules Chapter 9400

September 9, 2011

Table of Contents

I. INTRODUCTION

The Minnesota Department of Health (MDH) and the Minnesota Pollution Control Agency (MPCA) are proposing revisions to existing Minnesota Rules, Chapter 9400, which govern the certification of water supply systems and wastewater treatment facility operators and the classification of water supply systems and wastewater treatment facilities. When Local Units of Government (LUG) and other system or facility owners upgrade these systems or facilities, the systems or facilities are raised to a higher certification level. Their facility operators, however, might not yet meet the certification requirements to operate the upgraded facility, leaving the facility without the requisite staff per Minn. Stat. § 115.73, subd. 1. Further, the state projects a labor shortage in qualified operators in the next decade.

Specifically, MDH and MPCA propose amending Minn. R. 9400.1500, the "Conditional Certificate" rule, to bridge this transitional gap. The agencies will do this by allowing certified operators working with systems or at facilities that get upgraded and do not have an operator on staff at the appropriate classification level, to keep their jobs until they acquire the appropriate certification if they meet two conditions: First, the operator seeking the higher class certification must have been an operator with direct responsibility, per Minn. R. 9400.0100, subp. 3a, of that particular system or facility for 12 consecutive months before applying for a conditional certificate. Second, the operator must pass all exams in sequence that are required for the upgraded certification level, before any system or facility upgrades that are related to the change in class can be put into operation. While systems and facilities might be upgraded two or more classifications within the time it takes for a permit to be modified, operators currently must take years to reach a higher classification due to a years-of-experience requirement. The goal of this rule is to allow "qualifying operators" (operators that meet the two conditions described above) time to attain the years of experience needed for obtaining the higher certification, by continuing to work with that particular system or at that facility, without compromising the integrity of the important public health functions they perform.

II. BACKGROUND

MDH and MPCA, in consultation with the Advisory Council on Water Supply Systems and Wastewater Treatment Facilities (Advisory Council) discussed two issues related to the anticipated shortage in certified operators: labor shortage and lengthy certification time. First, it is estimated that between thirty to fifty percent of certified operators will be eligible to retire within ten years. (see Attachments A to E.) Second, due to the increased use of low-tech solutions for nitrogen and phosphorus removal (such as the use of chemical additives) and minor upgrades or process changes, systems and facilities now achieve higher classifications years before their operators can obtain the necessary higher certification required to operate them. Consequently, the state anticipates having a workforce that has shrunk by attrition and not kept pace with the coming changes, resulting in a shortage of qualified, certified operators This rulemaking proposes to address these issues by changing the existing conditional certificate program that will allow for greater flexibility and lower hiring and training costs for the LUG and other system or facility owners in challenging economic times.

There are two ways systems or facilities achieve a higher classification, by initiating upgrades that allow them to meet more stringent effluent limits. First, they can undertake a physical upgrade, through construction at the facility to install equipment. Second, they can use chemical additives that allow them to meet the more stringent limits. The system or facility would be reclassified at the time of their permit reissuance.

In addition, in 1995, MDH and MPCA adopted rules that revised the point classification system scale contained in Minn. R. 9400.0500. As a result, facilities were reclassified to a higher, or sometimes two levels higher, classification, without making a physical or chemical change, at the time of their permit reissuance. Operators cannot move levels unless they meet the requirements set forth in Minn. R. 9400.0700, which includes a years of experience or education requirement.

Currently, Minn. R. ch 9400 contains a conditional certification component in Minn. R. 9400.1500 that is limited to systems and facilities that do not undertake construction to achieve the higher classification and even then, allows an operator to move up only one classification, while facilities may move up one or more.

If promulgated, the proposed rule would extend conditional certification to operators under the following conditions:

A. The operator is a current operator with direct responsibility;
B. The operator has worked as the operator with direct responsibility at the same system or facility a minimum of 12 consecutive months before applying for the conditional certificate;
C. The applicant passes all exams required for the higher class in sequence (D, C, B, and A) and before startup of any system or facility upgrades that are related to the change in class.

The conditional certification would be for three years from the date of issue and could be renewed if the applicant has completed the necessary training required for renewal.

Classification and certification requirements exist to protect human health and the environment. Water supply systems provide a safe supply of drinking water to the public and effectively prevent the spread of water-borne diseases such as cholera. Wastewater treatment systems protect the public health by collecting, treating, and safely disposing of human waste. Natural resources are also protected by effectively treating wastewater and preventing the degradation of lakes, streams, and groundwater.

Classifications of Water System

Under Minnesota Rules 9400.0400, water supply systems are classified based on the source of water, complexity of treatment, amount of storage, number of wells, and the population served. A rating scale is used to assign points to each area. The more complicated the water is to treat and the larger the system, the higher its point rating will be.

Classifications of Wastewater Treatment Facilities

Wastewater treatment facilities are classified based on the complexity of the facility and the receiving water sensitivity under Minn. R. 9400.0500. A rating scale is used to assign points to each process unit in a facility. The more complicated a process unit is to operate, the higher its point rating will be. Also, points are assigned based on the facilities' permit limit for Carbonaceous Biochemical Oxygen Demand (CBOD, an indicator of the strength of the wastewater). This is determined in part by the receiving water sensitivity and class of water. If the receiving water is a trout stream or a source of drinking water, the CBOD limit may be set very low. On the other hand, a facility discharging to a receiving stream that has a limited resource class designation would have a higher CBOD limit. So, the lower the CBOD limit ("cleaner" effluent), the higher the points are assigned. This is because it is more

complicated to turn out a "clean" effluent. In addition to CBOD, points are assigned for various parameters, including nitrogen and phosphorus removal requirements.

Both Water Systems and Wastewater Treatment Facilities

The points are added up and based on a rating scale are assigned a system or plant classification from A (highest) to D (lowest). This also determines the classification of the water or wastewater operator needed to run the system or facility. A complicated Class A system or facility needs to have at least one Class A certified operator running the plant (see Minn. Stat. § 115.73, subd. 1.). A relatively simple Class D system or facility needs at least one Class D certified operator.

To ensure that an operator is qualified to run a system or facility, each classification carries different experience and education requirements that applicants must meet to be eligible to take an operator examination. The minimum experience required to take a Class D examination is one year of water or wastewater operating experience. The requirements increase with each higher classification. An operator may meet the education and experience requirement by having either (1) years of experience alone or (2) a combination of formal education and years of experience designated in the following table:

Class	**Experience Only**	**OR**	**Experience + Education**	**Certification Required**	**Direct Responsibility Experience (*See* Minn. R. 9400.0100, Subp. 3a.)**	**Training Required for Renewal**
A	8 years at an A or B facility	OR	4 years at an A or B facility + B.S.	Class B for 2 years	2 years	32 hours
B	6 years at an A, B or C facility	OR	2 years at an A, B or C facility + B.S.	Class C for 1 year		24 hours
C	3 years at an A, B, C or D facility	OR	1 year at an A, B, C or D facility + B.S.			16 hours
D	1 year at an A, B, C or D facility	OR	Wastewater program graduate			8 hours

As the table shows, the experience requirements increase accordingly as classifications increase in complexity. Also shown in the table, is the number of training hours required to renew each certification class every three years. Training is required before renewal, to ensure that operators have learned the changing technology, changing regulations, and safety precautions in their industry.

The Mandatory Certification Program for System and Facility Operators

Since 1971, Minnesota has certified its wastewater operators to enhance the quality of their performance and thus the quality of wastewater released to the receiving waters. Minnesota Statute,

Chapter 115 and Minnesota Rule, Chapter 9400 establish both water supply system and wastewater treatment facility classification and operators certification requirements.

The purpose of the mandatory operator certification program is to ensure that the individuals responsible for the operation of Minnesota's water supply systems and wastewater treatment facilities have demonstrated, by passing a written examination, that they know how to properly operate the system or facility. In addition, day-to-day facility experience is required much like an apprenticeship program. This allows a less experienced operator to learn facility operations and permit requirements, and what to do if a biological or chemical upset occurs, while under the supervision of a more experienced, certified operator.

Purpose of Rulemaking

This rulemaking addresses an anticipated shortage of certified operators while continuing to be protective of human health and the environment. Increased nutrient removal regulations for phosphorus (P) or nitrogen (N) removal applicable to wastewater facilities have resulted in the more frequent use of low-tech solutions that increase phosphorus and/or nitrogen removal, without adding significant complexity to the system or facility. For example, facilities may use chemical additives to increase removal of P and/or N. These low-tech solutions allow the facility to meet limits without the need for additional equipment that requires more operator expertise to operate effectively. A facility's increased ability to remove P and/or N, results in the addition of points assigned to the facility, which may cause it to jump one or more classification levels. The jump in classification levels can result in a length-of-years-of-experience problem for the operators on staff. The increased classification may make it harder for LUGs to obtain properly certified wastewater operators and comply with Minn. Stat. § 115.73. Thirty to fifty percent of these operators are eligible to retire in the next 10 years. To help offset this shortage; MDH and MPCA propose these amendments, which are designed to allow for flexibility when issuing a conditional certificate.

The scope of this rulemaking is narrow. It only allows qualified operators already on staff for a particular system or facility to apply for a conditional certificate, and only for a three-year period of time, unless the conditional certificate is renewed. Because "qualified operators" have experience with the particular system, facility equipment and operations, they are in a unique position to know what is the "norm" for the system or facility, what tweaks have worked to address problems or issues in the past, what Significant Industrial Users (SIUs) can do to address or head off issues or upsets, bypasses, etc. and the steps to take if upsets occur. Because this proposed rule requires 12 consecutive months of experience as the operator with direct responsibility (as defined by Minn. R. 9400.0100, subp. 3a) of the particular system or facility authorized under the conditional certificate, human health and the environment will still be protected.

III. PROCEDURAL HISTORY

MDH and MPCA took the following steps to develop the rule revision and to notify interested parties about the rule revision and to get their input on draft rule language:

1. Since 1998, the Advisory Council has discussed how to resolve the disparity in classification when facilities upgrade to a higher classification than their operators can achieve without years of additional experience.

2. The Advisory Council initiated discussion with MDH and MPCA on issues with certification and impending retirements at its July 18, 2002, quarterly meeting.

3. This issue first came up when an operator from Zimmerman, who held a Class C Certification, could not take the Class B exam after his facility was upgraded from a Class D pond to a Class B activated sludge facility. The operator had Class D experience, but needed Class C or higher experience to be eligible to take the Class B exam.

   The rule currently allows for a conditional certification for an operator with direct responsibility if their facility is reclassified to a higher classification without undertaking construction and even then, an operator can only move up one class.

4. MDH and MPCA staff agreed the MPCA would take the lead on the rulemaking.

5. On August 17, 2009, MDH and MPCA published a Request for Comments in the *State Register* regarding its plans for amending the rule. The MPCA also launched the following webpage to keep interested and affected parties apprised of the status of the process: http://www.pca.state.mn.us/water/wtcertification.html.

6. On October 9, 2009, MPCA staff met with the Advisory Council to determine whether support existed for amending the rules governing conditional certification for wastewater facility operators and water treatment system operators. The concept discussed would allow respective agencies to grant conditional certificates to operators when a facility or system has been reclassified to a higher class due to an alteration to the facility or system.

7. On May 26, 2010, MDH and MPCA staff met with the Advisory Council to determine whether they supported the May 19, 2010, preliminary draft rule revisions. The Council verbally approved the changes with an added recommendation that the MPCA insert "Wastewater" into the title of the rule.

8. Throughout the rule and SONAR writing process, the Advisory Council was consulted regarding various portions of the rule, most recently, on January 7, 2011, when MDH and MPCA discussed additional changes.

IV. ALTERNATIVE FORMAT

Upon request, this SONAR can be made available in an alternative format, such as large print, Braille, or cassette tape. To make a request, contact:

Water Supply Systems Contact at MDH:

Mark Sloan
Minnesota Department of Health
625 Robert Street North
PO Box 64975
St. Paul, MN 55164-0975
Phone: 651-201-4652
E-mail: Mark.Sloan@state.mn.us
TTY: 612-201-5797 or 888-345-0823

Wastewater Treatment Facilities Contact at MPCA:

Yolanda Letnes
MPCA - Municipal Division
520 Lafayette Road North
St. Paul, MN 55155-4194
Phone: 651-757-2527
Fax: 651-297-8676
Email: yolanda.letnes@state.mn.us
TTY: 651-282-5332 or 800-657-3864.

V. MDH AND MPCA's STATUTORY AUTHORITY

The following information, which was extracted from MDH and MPCA's April 23, 1996, Statement of Need and Reasonableness, provides the statutory history and authority for MDH and MPCA's prior rulemaking involving the certification of water supply operators and classification of systems, and certification of wastewater treatment operators and classification of wastewater treatment facilities:

> A mandatory program to certify water supply system and wastewater treatment facility operators was established by Minnesota Statutes (1971), Chapter 115. This statute established the Water and Wastewater Operator Board of Certification (Board) and delegated rulemaking authority to the Board. The MPCA was charged with administering the program for wastewater treatment facilities and operators with MDH administering the corresponding program for water supply systems and operators. The Board promulgated Minnesota Rule WWOB 1 to administer this program effective July 1, 1972. In 1975, Minnesota Statutes, section 115.71 was amended, renaming the Board to the Water Supply and Wastewater Treatment Operators Certification Council.
>
> Minnesota Rule WWOB 1 established the criteria for the classification of water supply systems and wastewater treatment facilities, criteria for operator qualifications and procedures for application for examinations, the issuance and renewal of certificates. Minnesota Regulation WWOB 1 was filed with the Secretary of State on June 26, 1972. Minnesota Regulation WWOB 1 was repealed and replaced by 6 MCAR 5.001, 6 MCAR 5.002, and 6 MCAR 5.003, which became effective May 26, 1979. These rules were recodified in 1984 and are currently numbered parts 9400.0200 to 9400.1400.
>
> The 1994 Legislature "sunsetted" the Water Supply and Wastewater Treatment Operators' Certification Council on July 1, 1994. This required that new legislation be enacted to allow the mandatory certification program to continue. The certification council continued to function until May 1995 when the Legislature passed Laws of Minnesota Chapter 180 that authorized a new eleven member advisory council, appointed by the Commissioners of MDH and MPCA, until June 30, 1999. Rulemaking authority was granted jointly to MDH and MPCA.

MDH's and MPCA's current statutory authority to adopt and implement these rules is set forth in Minn. Stat. § 115.72, subd. 2, which provides:

"The commissioner of health and the agency shall jointly adopt rules relating to the certification qualifications for each classification of water supply system operators and wastewater facility operators, respectively. The rules must provide for at least one annual examination for each class of certificate and must include, but are not limited to:

(1) education requirements;
(2) education substitution provisions;
(3) experience requirements;
(4) experience substitution provisions;
(5) examination content requirements, testing procedures, and criteria for passing;
(6) certificate renewal requirements;
(7) schedules for submitting applications and fees; and
(8) reinstatement requirements for expired, suspended, or revoked certificates.

The advisory council must be consulted before any rules are proposed under this subdivision."

Under this statute, MDH and MPCA have the necessary statutory authority to adopt the proposed rule amendments, as the Advisory Council was consulted before the proposal of this rulemaking. All statutory authority was adopted and effective before January 1, 1996.

The proposed rule will be enforced in accordance with the authority provided to MDH and the MPCA under Minn. Stat. §§ 115.071, 115.73, 115.75, 116.072, and 144.99. Additionally, the rule will be enforced in accordance with any other applicable statute, rule, or permit condition. If approved, this rule would be enforceable by MDH and MPCA.

(Minnesota Rules, part 1400.2070, subpart 1, item D, requires that if an agency's statutory authority was granted after January 1, 1996, the agency must include in its SONAR the effective date of the agency's statutory authority to adopt the rule).

VI. REGULATORY ANALYSIS

Minn. Stat. § 14.131 sets out seven factors for a regulatory analysis that must be included in the SONAR. Paragraphs (1) through (7) below quote these factors and then provide MDH and MPCA's response. Paragraph (8) addresses additional requirements listed in Minn. Stat. § 14.131.

1. *"A description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule."*

The classes of persons who will be affected by this rule are the community water supply system operators, wastewater treatment facility operators, contract operator individuals and groups, entities that have community water supply systems and wastewater treatment facilities, and all persons that obtain their water from a community water supply system, or have their wastewater treated at permitted wastewater facilities.

The affected classes listed above are not expected to bear any additional cost as a result of the proposed rule, except for the cost of obtaining a conditional certificate, which has been $40 since 1995. Because the conditional certificate allows the current operator to keep his or her job, it is anticipated that the fee for the certificate will not be a deterrent or cost-prohibitive.

The costs for LUGs, however, would not increase, but would remain the same or decrease because the entities would not be required to hire another certified operator to oversee the system or facility. As discussed in this section, the rule revisions are expected to result in a cost-saving benefit for LUGs as they will not need to incur the cost of hiring, training, and retaining qualified operators for their upgraded system or facility and still comply with their statutory requirements. With more eligible certified operators in the marketplace, the costs to employ a qualified individual should be less than if this rulemaking were not undertaken, in addition, costs to hire, train and retain employees would be greater if this rulemaking were not done.

The classes of persons who will benefit by this rule include current community water supply system operators and wastewater treatment facility operators because they would be able to maintain their employment. Public and private entities that have community water supply systems or wastewater treatment facilities benefit from the rules because their operators are able to continue to operate at the system or facility, while continuing their training and taking the appropriate examinations. This will also ensure that valuable knowledge, skills and abilities gained at the system or facility will stay in the community and aid in knowledge transfer and succession planning.

Persons that obtain their water from a community water supply system, or have their wastewater treated at permitted wastewater facilities will also benefit by continuously receiving potable water to their residence that meets all federal and state requirements pertaining to environmental health, and by having their wastewater collected, treated and discharged in a manner that does not adversely affect the environment. They can be assured that these two important but often unrecognized facets of everyday life are being conducted by trained professionals, familiar with the maintenance and operation of the particular system and facility. Finally, consumers benefit when the LUG or supplier has fewer costs that otherwise might be passed on to them.

2. *"The probable costs to the MPCA and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues."*

The Minnesota Department of Health and the Minnesota Pollution Control Agency already have fee-supported programs in place to process applications, issue certificates and administer the entire certification program. It is not anticipated to significantly increase costs to either MDH or MPCA. The conditional certification program is already in place and staffed. While some additional applications may be sent to MPCA due to this rulemaking, it is not expected to be a significant number.

3. *"A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule."*

Maintaining public safety requires that operators have the necessary training to operate the wastewater systems and facilities. Allowing current operators the proposed flexibility is the least intrusive remedy because dropping operator qualifications would not allow MDH and MPCA to protect the public. The coming labor shortage is a reality that the agencies must address now.

4. *"A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule."*

Two alternatives were considered. The first was to take no action. This idea was rejected due to the anticipated costs to LUGs and communities. At risk were LUGs going into noncompliance. In addition, noncompliance would lead to costs for MDH, MPCA and the regulated parties (enforcement staff costs, fines, contracting costs, etc.). No action would result in the need for the LUGs to contract the work out, an option considered more expensive than hiring municipal staff. As discussed in this section, the rule revisions are expected to result in a cost savings for LUGs as they will not need to incur the cost of hiring, training, and retaining qualified operators for their upgraded system or facility and still comply with their statutory requirements. Such an action would exacerbate the problem with loss of qualified staff in the next ten years since thirty to fifty percent of certified operators are eligible for retirement.

The second option considered was to revise the way the classification of facilities were determined, but this option was viewed as potentially resulting in a more complex rule.

5. *"The probable costs of complying with the proposed rule including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals."*

No additional costs are anticipated for any class of governmental unit, businesses or individuals. In fact, costs for LUGs would decrease as compared to the costs without this rulemaking. This is due to the fact that LUGs would not have to recruit, hire, train, new employees but would be able to continue with established employees without bearing these costs.

The MPCA may have a slight increase in applications due to operators applying for conditional certificates, but the conditional certificate program and staff are already in place and will not be altered by this rulemaking. In addition, the actual number of conditional certificates is not expected to increase dramatically.)

6. *"The probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals."*

The cost for not adopting the proposed rule includes increased costs to hire an additional certified operator for the system or facility, and possible job loss or demotion for the current operator of the upgraded system or facility.

As discussed in this section, the rule revisions are expected to result in a cost saving for LUGs as they will not need to incur the cost of hiring, training, and retaining qualified operators for their upgraded system or facility and still comply with their statutory requirements.

7. *"An assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference."*

This is a state rule and program and there are no federal regulations specific to wastewater operator certification.

8. *"Describe how the agency, in developing the rules, considered and implemented the legislative policy supporting performance-based regulatory systems set forth in section 14.002." Minn. Stat. § section 14.002 states:*

> "*…the legislature finds that some regulatory rules and programs have become over prescriptive and inflexible, thereby increasing costs to the state, local governments, and the regulated community and decreasing the effectiveness of the regulatory program. Therefore, whenever feasible, state agencies must develop rules and regulatory programs that emphasize superior achievement in meeting the agency's regulatory objectives and maximum flexibility for the regulatory party and the agency in meeting those goals…"*

In pursuing amendments that allow for a conditional certificate, MDH and MPCA are providing flexibility in how they issue certificates to operators and the regulated community. This flexibility will benefit the facility owner by allowing them to "grow" and retain their talent without additional employee related costs. Additionally, it allows facility operators time to gain the length of experience that is necessary to apply towards the certificate level they must maintain to effectively operate their facility. The proposed amendments also allow operators familiar with a particular system or facility to continue to use their expertise to benefit the communities served while maintaining the integrity of the regulatory program designed to protect public health and the environment.

VII. ADDITIONAL NOTIFICATION

Minn. Stat. § 14.131 requires that an agency include in its SONAR a description of its efforts to provide additional notification to persons or classes of persons who may be affected by the proposed rule or must explain why these efforts were not made.

On August 17, 2009, MDH and MPCA published notice requesting comments on planned rule amendments to Minnesota Rules Chapter 9400. The same notice was also placed on the MPCA's Public Notice webpage.

MPCA Plans for Notice:

The MPCA intends to send a copy of the Dual Notice and the proposed rule amendments to the following:

A. All parties who have registered with the MPCA for the purpose of receiving notice of rule proceedings, as required by Minn. Stat. § 14.14, subd. 1a;

B. All individuals and representatives of associations the MPCA has on file as interested and affected parties;

C. Advisory Council;

D. The chairs and ranking minority party members of the legislative policy and budget committees with jurisdiction over the subject matter of the proposed rule amendments will receive a copy of the proposed rule amendments, SONAR, and Dual Notice as required by Minn. Stat § 14.116. This statute also states that if the mailing of the notice is within two years of the effective date of the law granting the agency authority to adopt the proposed rules, the agency must make reasonable efforts to send a copy of the notice and SONAR to all sitting house and senate legislators who were chief authors of the bill granting the rulemaking. This does not apply because no bill was authored within the past two years granting rulemaking authority.

In addition, the MPCA plans to:

A. Issue an electronic notice to MPCA staff on the date the rule appears in the *State Register*;

B. Issue a press release describing this rulemaking, which makes it clear that both water and wastewater operators are affected, on the date that the rule appears in the *State Register*. The press release list (~841) generally includes the following categories:

- daily newspapers
- environmentalists
- industry
- radio stations
- T.V. stations
- weekly newspapers
- solid waste officers
- consultants
- magazines
- staff
- other government staff

C. Provide notice to the following so they can disseminate the information to their memberships:

a. Minnesota Wastewater Operator Association, which publishes "The Wastewatcher" newsletter;
b. Minnesota Rural Water Association, which publishes the "Today" newsletter;
c. League of Minnesota Cities;
d. Association of Minnesota Townships
e. Association of Minnesota Counties

D. Mail a postcard that will contain the following information to individuals listed below: (a) how to obtain a hard copy of the proposed rules, SONAR, and Dual Notice; (b) the address of the MPCA webpage where these three documents will be located and additional rulemaking information is available; (c) how to submit comments on the proposed rules:

a. Minnesota Wastewater Treatment Facility permit holders; and
b. List of certified wastewater operators (listing of current mailing address for operators certified or recertified since 1997);

In addition, a copy of the dual notice, proposed rule amendments and SONAR will be posted on the MPCA's Public Notice webpage. The MPCA redesigned its website and migrated its public notice webpage from http://www.pca.state.mn.us/news/index.html to http://www.pca.state.mn.us/iryp3c9

Additionally, the rule specific webpage was migrated from http://www.pca.state.mn.us/water/wtcertification.html to http://www.pca.state.mn.us/ktqh91f

Pursuant to Minn. Stat. § 14.14, subd. 1a, the MPCA believes its regular means of notice, including publication in the *State Register* and on the MPCA's Public Notice webpage will adequately provide notice of this rulemaking to persons interested in or regulated by these rules.

MDH Plans for Notice:

MDH plans to:

A. MDH will rely on the MPCA's press release mentioned in the MPCA plans including operators and water systems in addition to wastewater operators and facilities. Since the majority of operators carry both water and wastewater certificates it would be duplicative to issue separate press releases.
B. Add language about water operators and water supply systems in to the information that the MPCA sends to:
    a. the League of Minnesota Cities,
    b. Association of Minnesota Townships,
    c. Association of Minnesota Counties, and
C. Minnesota Rural Water Association
D. Send the same information to:
    a. Minnesota Section American Waterworks Association; and
    b. MDH Newsletter *Waterline*
E. Coordinate MDH and MPCA lists to include water supply operators so that all water operators receive the notice but operators that hold both water and wastewater certificates are not sent two notices.

MDH's notices would use the same website links that the MPCA does.

VIII. CONSIDERATION OF ECONOMIC FACTORS

In exercising their powers, MDH and MPCA are required by identical provisions in Minn. Stat. § 116.07, subd. 6, and Minn. Stat. § 115.43, subd. 1, to give due consideration to:

> *"...the establishment, maintenance, operation and expansion of business, commerce, trade, industry, traffic, and other economic factors and other material matters affecting the feasibility and practicability of any proposed action, including, but not limited to, the*

burden on a municipality of any tax which may result there from, and shall take or provide for such action as may be reasonable, feasible, and practical under the circumstances…"

It is anticipated that the proposed rule will not cause any hardships to owners and operators of systems and facilities and instead would save system and facility owners and LUGs money and save the operators their current jobs.

IX. IMPACT ON FARMING OPERATIONS

Minn. Stat. § 14.111 requires an agency to provide a copy of the proposed rule changes to the Commissioner of Agriculture no later than thirty days before publication of the proposed rule in the *State Register,* if the rule has an impact on agricultural land.

This rule is not expected to impact agricultural land or farming operations, thus, the Commissioner of Agriculture will not be notified.

X. IMPACT ON CHICANO/LATINO PEOPLE

Minn. Stat. § 3.9223, subd. 4 requires agencies to give notice to the State Council on Affairs of Chicano/Latino People for review and recommendation at least five days before initial publication in the *State Register*, if the proposed rules have their primary effect on Chicano/Latino people.

This rule is not expected to have a primary effect on Chicano/Latino people, thus, the State Council on Affairs of Chicano/Latino People will not be notified.

XI. NOTIFICATION OF THE COMMISSIONER OF TRANSPORTATION

Minn. Stat. § 174.05, requires MDH and MPCA to inform the Commissioner of Transportation of all rulemakings that concern transportation, and requires the Commissioner of Transportation to prepare a written review of the rules.

This rule is not expected to impact or concern transportation, thus, the Commissioner of Transportation will not be notified.

XII. CONSULT WITH MINNESOTA MANAGEMENT AND BUDGET ON LOCAL GOVERNMENT IMPACT

As required by Minnesota Statutes, section 14.131, MDH and MPCA will consult with Minnesota Management and Budget (MMB). We will do this by sending MMB copies of the documents that we send to the Governor's office for review and approval on the same day we send them to the Governor's office. We will do this before publishing the Notice of Intent to Adopt. The documents will include: the Governor's Office Proposed Rule and SONAR Form; the proposed rules; and the SONAR. MDH and MPCA will submit a copy of the cover correspondence and any response received from Minnesota Management and Budget to the Office of Administrative Hearing (OAH) at the hearing or with the documents it submits for Administrative Law Judge ALJ review.

As discussed in Section VI, the rule revisions are expected to result in a cost saving benefit for LUGs as they will not need to incur the cost of hiring, training, and retaining qualified operators for their upgraded system or facility and still comply with their statutory requirements.

XIII. MINNESOTA STATUTE § 14.128, SUBDIVISION 1 – DETERMINATION IF LOCAL GOVERNMENT WILL BE REQUIRED TO ADOPT OR AMEND AN ORDINANCE OR OTHER REGULATION TO COMPLY WITH PROPOSED AGENCY RULE

During the 2009 legislative session, the Minnesota Legislature adopted Minn. Stat. § 14.128. This statute requires an agency to make a determination whether a proposed rule would require a local government to adopt or amend its ordinances to comply with the rule. This statute is intended to address situations where an agency requires local governments to change their ordinances to, for example, be consistent with agency requirements.

The proposed amendments to the Water Treatment Certification rules do not require local governments to amend their ordinances to comply with MDH and MPCA rules. Local governments who are owners or operators of a system or facility must comply with the requirements in Minn. R. ch. 9400, just as they have been required to comply with these rules in the past. No changes to local ordinances are required or anticipated in order to comply with these rules.

XIV. MINNESOTA STATUTE § 14.127, SUBDIVISION 1 – COST THRESHOLDS

Minn. Stat. § 14.127 require MDH and MPCA to assess the potential economic impact to small businesses of complying with this proposed rule amendment. The statutory provision is as follows:

> *"An agency must determine if the cost of complying with a proposed rule in the first year after the rule takes effect will exceed $25,000 for: (1) any one business that has less than 50 full-time employees; or (2) any one statutory or home rule charter city that has less than ten full-time employees. For purposes of this section, "business" means a business entity organized for profit or as a nonprofit, and includes an individual, partnership, corporation, joint venture, association, or cooperative."*

The proposed rule is not expected to economically impact business entities. This rulemaking is expected to benefit businesses and SIUs by eliminating candidate search and training costs.

XV. MINNESOTA STATUTE § 116.07, SUBDIVISION 2 – MPCA SONAR REQUIREMENTS

2011 Minnesota Session Laws Chapter 4 requires that for proposed rules adopting water quality standards, the Statement of Need and Reasonableness must include an assessment of any differences between the proposed rule and existing federal standards adopted under the Clean Water Act, United States Code, title 33, sections 1312(a) and 1313(c)(4); similar standards in states bordering Minnesota; and similar standards in states within the Environmental Protection Agency Region 5; and a specific analysis of the need and reasonableness of each difference.

Regulation of water supply systems fall under the jurisdiction of MDH. Regulation of wastewater treatment facilities falls under the jurisdiction of the MPCA. The above session law changes to 116.07, subdivision 2 impact only those facilities under MPCA's jurisdiction.

The proposed rulemaking deals with state statutes and rules and not federal regulations. The author does not believe any similar federal standards exist to compare this Minnesota state rulemaking to. While no federal rules exist, there are wastewater treatment certification rules throughout the country. These rules exist because of the need to operate wastewater treatment facility equipment appropriately to protect human health and the environment. Before wastewater treatment certification regulations were promulgated in 1972, anyone, regardless of appropriate knowledge on operating the facility equipment, could operate a wastewater treatment facility. This resulted in inadequate treatment of wastes. Inadequate training also resulted in a lack of maintenance knowledge for that equipment and resulted in less efficient removal of BOD, TSS and pathogens. Discharge of these pollutants had the potential to impact potable water supplies, wildlife, and humans through skin contact or ingestion.

Restricted certification or conditional certificate programs exist in Minnesota and other states to address gaps in the operator experience requirements that sometimes occur. The shrinking pool of operators exacerbates the situation. It is necessary and reasonable to propose this rule to address these issues. The criteria applicants must meet to receive a conditional certificate in Minnesota ensures that they are knowledgeable and that human health and the environment is protected. The Advisory Council identified the need for the rule revisions and has extended its support for the proposed rule. The proposed revisions do not establish water quality standards, they deal with licensing criteria. In fact, the proposed rules provide flexibility to regulated parties that allow them to retain and "grow" their staff while protecting the environment.

In the five states that border Minnesota (Iowa, Michigan, Wisconsin, South Dakota, North Dakota) there are four comparable rules for restricted certification requirements (i.e. conditional certificate requirements). Each of these states (Michigan, Wisconsin, North Dakota, and South Dakota) use a combination of experience and education as criteria for issuing restricted wastewater operator facility certificates that are applicable only to that specific facility. The conditional certificate or restricted certificate, in all cases where issued, is specific to the facility and may not be carried to another facility. These are all elements that the states share with this proposed rulemaking.

Relevant Michigan, Wisconsin, North Dakota, and South Dakota rules may be found at the Michigan Administrative Code R299.2901-R299.2974 (Sewage System Rules); Wisconsin Administrative Code NR 114 (Certification Requirements for Waterworks, Wastewater Treatment Plants, Septage Servicing and Water System Operators); North Dakota Administrative Code 33-19-01 (Certification of Water and Wastewater System Operators) and Administrative Code of South Dakota 74:21:01-02 (Certification of Water and Wastewater Operators). Suspension, revocation, denial of or refusal to reissue a conditional certificate are current Minnesota statutory requirements and are referenced in the proposed rules for the regulated parties as information and require no further analysis since they do not change existing requirements.

The proposed Minnesota rule revisions include the following criteria:

A. the operator must be a current operator with direct responsibility for the wastewater facility;
B. the operator has worked with direct responsibility at the facility a minimum of 12 consecutive months prior to application;

C. the applicant must have passed all written exams for a higher class in sequence and prior to startup of any system or facility upgrades that are related to the change in class, and must provide proof of attendance at training applicable the specified facility; and
D. proposed Minnesota rules allow for issuance of a conditional certificate when no alteration to the facility has occurred with submittal of an application and without the need for an examination.

Michigan will issue a restricted certification for all existing operators at a facility that is reclassified. Due to recent rule revisions, operators must apply within 90 days of notification or within two years of the effective date of the rule revisions. Minnesota is only allowing the operator with direct responsibility to obtain the restricted certification after passing required exams. There is a need to address the impending shortage of appropriately certified operators. It is reasonable for Minnesota to take a more stringent approach than Michigan with respect to the number of operators who may qualify for a conditional certificate because comments received during rule development from the Advisory Council cautioned against establishing a "free-for-all" process.

Wisconsin has no restricted certification designation. If the facility is reclassified, the "operator-in-charge" has 12 months to pass required exams and is allowed time to obtain the required experience. Minnesota does not have a time constraint except the exams must be passed before the upgraded facility goes on-line. In Minnesota some facilities may move up more than one classification at a time, thus more than one examination may be required of the operator and examinations are offered at different times of the year. There is a need to address the impending shortage of appropriately certified operators. It is reasonable for Minnesota to require that the qualified operator pass all necessary exams before the upgraded facility goes on-line to ensure that the qualified operator has the necessary knowledge to operate the equipment at the system or facility. The Advisory Council supported the proposed rule with these criteria.

North Dakota may issue a temporary restricted operator's certificate "…where circumstances may exist to warrant issuance." It is valid for one year. The circumstances are not defined. When the operator satisfies the experience/education requirement, the operator submits an application to request the examination. It is conceivable that this could be used when a facility is reclassified. Minnesota defines the conditions when a conditional certificate may be issued. Once the restricted certification is issued, it is valid until the operator gains the necessary experience for the certificate level. At that time MPCA will remove the restricted status. There is a need to address the impending shortage of appropriately certified operators. It is reasonable for Minnesota to allow a conditional certificate to be valid for greater than one year to allow a qualified operator a sufficient amount of time to gain the necessary years of experience. It is also reasonable for Minnesota to establish criteria for issuing conditional certificates so that the applicant is aware of the requirements and can comply with them. The Advisory Council supported the proposed rule.

South Dakota has a restricted certificate but only for operators of facilities that do not have a modification. The restricted certificate is valid only at that facility and never expires. The existing Minnesota restricted certificate is similar to South Dakota. If there was a class change due to rule and no modification at the facility, Minnesota granted the restricted certificate which was valid only at that facility. However, Minnesota required that it had to be renewed as a regular certificate. This remains in the rule. The states are considered equivalent in this respect because the general restricted certificate rule for Minnesota is not changing other than to allow for the issuance of conditional certificates to operators facing facility upgrades.

Of the three states in EPA Region 5 other than Wisconsin and Michigan (Illinois, Ohio, Indiana), Ohio may issue a limited certificate to an existing operator. Relevant Ohio rules may be found at the Ohio Administrative Code 3745-7 (Water Supply Works and Wastewater Personnel.) The operator must be the designated operator of daily operational activities for at least 12 months preceding the limited certificate application. If reclassification changes, the limited certificate is no longer valid. Minnesota proposes the same requirement that the operator must have been working at least 12 months prior to application for a restricted certification. The states are considered equivalent in this respect, however, Minnesota requires that the 12 months be consecutive. This requirement was proposed by the Advisory Council to ensure that operators would have sufficient system familiarity given the dramatic change in seasonal flows throughout the 12 month consecutive period.

Illinois and Indiana regulations do not allow for any restricted or limited certification.

Minnesota was considered the leader in wastewater treatment regulations. Our rules were considered the model for other states. As states adopted and revised regulations, each customized our template to their needs.

The proposed rules do not establish water quality standards; instead they deal specifically with amending language regarding the granting of conditional certificates to qualified facility or system operators currently certified, but at a lesser classification due to a lack of "years of experience" requirement. The proposed amendments allow these operators to take and pass a written exam, before changes that resulted in a classification change to the facility or system come online. This allows operators to qualify for a conditional certificate and retain their employment. As discussed throughout this SONAR, the amendments are designed to be protective of the environment and yet provide flexibility to operators. Requiring operators take and pass a written exam(s) assures they demonstrate knowledge appropriate for the operation of relevant equipment. The proposed rules also provide LUGs with the ability to retain knowledgeable staff and minimize the need to incur new staffing costs associated with searching, hiring and training.

The 2011 Minnesota Session Laws Chapter 4 also requires a specific analysis of the need and reasonableness for each difference from federal and neighboring state water quality standards. As discussed, federal water treatment facility standards are nonexistent. The lack of a rule at the federal level does not imply that it is not needed at the state level to ensure adequate protection of human health and the environment. Each state experiences different climates and weather patterns that affect how the waste can be optimally treated there. For example, a stabilization pond would be designed and operated differently in the desert as compared to a humid climate. It is both necessary and reasonable to ensure wastewater treatment regulations exist and that the individuals operating those facilities are qualified to do so to ensure protection of human health and the environment. As discussed in sections II and III of the SONAR, the Advisory Council has identified the need to address the problem of having a facility raised to a higher classification level without a mechanism for an operator to achieve the necessary certification in a timely manner. Without the rule revisions LUGs will incur the costs described in section VI of the SONAR and operators face the risk of being eliminated or demoted.

The specific need and reasonableness of each of the listed criteria is fully described in sections XVI and XVII of the SONAR. When comparing the proposed rule to other state rules, the specific need and reasonableness under each of the criteria are applicable in comparison with other states. This rulemaking seeks to resolve the expected shrinking pool of qualified wastewater treatment operators,

while retaining the most protection for human health and the environment. By keeping the most qualified people operating systems they are intimately familiar with this rulemaking provides the greatest possible protection for human health and environment in light of the expected shortage. In comparison to other states, it appears that other states are either not facing the same shortage or not addressing it through rulemaking.

When considering the reasonableness of this rulemaking, MPCA respectfully notes that Minn. Stat. § 115.76 establishes the commissioners of MDH and MPCA:

> *"…may issue certificates without examination, in a comparable classification to any person who holds a certificate in any state, territory, or possession of the United States or any country, providing the requirements for certification of operators under which the person's certificate was issued to not conflict with the provisions of sections 115.71 to 115.77 and are of a standard not lower than that specified by rules adopted under sections 115.71 to 115.77."*

It is needed and reasonable for the MPCA to address the issues identified by the Advisory Council by drafting and proposing this rule language. MPCA consulted with the Advisory Council throughout the process.

XVI. STATEMENT OF NEED

Minn. Stat. § ch. 14, requires MDH and MPCA to make an affirmative presentation of facts establishing the need for and reasonableness of the rules as proposed. In general terms, this means that MDH and MPCA must not be arbitrary or capricious in proposing rules. However, to the extent that need and reasonableness are separate, "need" has come to mean that a problem exists that requires administrative attention, and "reasonableness" means that the solution proposed by MDH and MPCA is appropriate. The need for the rule is described below.

Nutrient removal regulations for wastewater facilities have increased over the years. The need to increase phosphorus and nitrogen removal results in the addition of points in facility classification causing many facilities to jump two classification levels. The jump in classification levels results in a length of years experience problem for the operators to achieve the necessary classification certification.

The classification increase has made it harder for LUGs, to retain or obtain properly certified wastewater operators because current rules only allow operators to go one classification level higher than their experience level. Exacerbating that situation further is the fact that it has been estimated that thirty to fifty percent of these operators are eligible to retire in the next ten years, which will create a shortage of certified operators.

Facilities are essentially faced with two options:

1. Keep under-certified operator and hire a certified operator until their under-certified operator obtains the proper certification level by passing the exam and obtaining the years of experience (more costly); or

2. Eliminate or demote current operator and hire a certified operator at the level required by the system or facility classification.

These options have negative consequences in that they increase operating costs that may be passed on to the consumer. There is a need to address the problems the increased system and facility classifications have on operator certification to ensure that facilities have the necessary staff to operate their equipment. In addition, there is a need to provide the operators flexibility to allow them to gain length of time experience in order to be able to seek the higher certification, while not forcing them out of employment or into a demotion.

XVII. STATEMENT OF REASONABLENESS

Minn. Stat. § ch. 14 requires MDH and MPCA to explain the facts establishing the reasonableness of the proposed rule amendments. "Reasonableness" means that there is a rational basis for MDH and MPCA's proposed action. The reasonableness of the proposed rule is explained in this section. This section is broken into two main parts: A. Reasonableness as a whole; and B. Reasonableness of the individual rule parts.

A. Reasonableness of the Proposed Rule Amendments as a Whole

To prevent increased costs for a facility or system and job loss or demotion for an operator of the system or facility, the proposed rule allows for measured flexibility when issuing a conditional certificate. The flexibility is narrowly tailored to only be applied to qualified operators with practical hands-on experience with the particular system or facility and its operations and maintenance.

A qualified operator would be allowed to take a higher level exam than his/her experience would normally allow. He or she must pass the exam in order to obtain the conditional certificate.

A conditional certificate would be issued and would be effective for three years from the date of issue. It must be renewed in the same way as a regular certificate and would only be valid for the particular system designated or only at that particular reclassified facility. This ensures that the operator is obtaining appropriate training and ensures that knowledge is gained by passing the exam and still maintains the practical experience obtained by working on the job and with that particular equipment.

Once the operator has met the experience requirements, a regular certificate would be issued. If an operator leaves the facility before reaching the experience requirement, the certificate would revert to the level of the operator's earned experience and examinations passed.

It is reasonable to amend the rule as proposed, to avoid increased costs for the LUG and provide a way for qualified operators, to gain additional experience while avoiding a job loss or demotion at the next level. The revisions do not negatively impact the public health and welfare. This rulemaking does not change the standards required for systems or facilities or lessen the importance of the experience requirement. Because familiarity as an apprentice working at a facility and troubleshooting issues and upsets is vital to the certification program, this rulemaking is narrowly tailored to include only qualified operators who would have some of the facility experience. While a facility classification upgrade can move more than one level, the certification of a system or facility operator with direct responsibility, can only move one level at a time and only move after years of experience. An operator can take the training course and pass the exam, but they cannot make up the years of experience and will lose their

job or suffer a demotion. In the interest of keeping experienced, current operators, with direct responsibility of the same systems and facilities in their jobs, MDH and MPCA propose that therefore, it is reasonable to propose the amendments.

B. Reasonableness of the Amendments to Individual Sections of Rule

This section addresses the reasonableness of each rule part and attempts to answer questions about what each rule requirement is intended to do, why it is needed, and why it is reasonable. Some rule parts are obvious as far as their need and reasonableness and therefore, are only explained briefly, while others are explained in more detail for future rule interpretation.

1. <u>Part 9400.1500, Subp. 1. Purpose and Eligibility</u>

Part 9400.1500, subp. 1, explains the purpose of the conditional certificate and identifies who is eligible for one. It is reasonable to establish these requirements to ensure regulated parties and regulators have a shared understanding of the language.

Item A establishes the first of three conditions that must be met for eligibility. It is reasonable to establish a condition that only current operators with direct responsibility be considered for a conditional certificate because failing to do so would allow more than one operator at the same system or facility the opportunity to obtain a conditional certificate. As discussed previously, this rulemaking is intended to alleviate the shortage of classified operators due to looming retirements and keep experienced people in their jobs.

Item B establishes the second condition for eligibility. It requires that the operator be employed at the same system or facility for a minimum of 12 consecutive months before application for a conditional certificate. It is reasonable to establish this requirement because 12 consecutive months experience with the particular system, facility equipment and operations, provides the operator day-to-day experience to determine the "norms" for the system or facility, what tweaks work to address problems or issues, what significant industrial users (SIUs) can do to address or head off issues or upsets, bypasses, etc., and the steps to take if upsets occur. Such experience is valuable in addressing process problems to ensure protection of human health and the environment.

Item C establishes the final conditions for eligibility. The applicant must pass all exams required for the higher class in sequence, i.e., Class D, Class C, Class, B, and Class A before the startup of any system or facility upgrade related to the change in class. It is reasonable to require sequential examination because each successive exam addresses an increased level of knowledge and skill application that builds on the previous exam areas. The applicant must demonstrate their proficiency in these areas before progressing to the next higher level. In lieu of hiring an operator at the higher class, it is reasonable to require that the qualified operator pass all exams before startup of the facility upgrade or system upgrade, related to the change in class, to ensure that operators have demonstrated competency with the equipment and skills necessary to operate the upgraded systems.

An applicant is not eligible for a conditional certificate if they do not meet all of the required conditions.

2. Part 9400.1500, Subp. 2. Certification Limits

Part 9400.1500, subp. 2, has been repealed with these rule revisions. Repealing the now outdated existing language due to the decision to allow conditional certificates where alterations to the facility have occurred is necessary.

3. Part 9400.1500, Subp. 3. Repealed

No changes were proposed to this subpart.

4. Part 9400.1500, Subp. 4. Nontransient Noncommunity Systems

Part 9400.1500, subp. 4, has been repealed because it is obsolete. Obsolescence is based on expiration of the application deadline to be "grandfathered in" for nontransient-noncommunity systems, which was October 1, 2001. It is reasonable to remove unnecessary language so that rule language remains current.

5. Part 9400.1500, Subp. 5. Issuance and Renewal

Part 9400.1500, subp. 5, is a new requirement. This new requirement specifies the limits of the conditional certificate and the training requirement for renewal. Since the agencies are allowing an operator a higher level certification than his experience, it is prudent to require training that is related to the reclassified system or facility. There are no extra costs because the training requirement is in rule and in practice already. This rule revision is so narrow in scope, that although the MPCA may see additional conditional certification applications, it is not expected it will have a significant impact on MPCA resources. It is reasonable to specify renewal conditions to ensure regulated parties are aware of them.

6. Part 9400.1500, Subp. 6. Conditional Certificate with no Alterations

Part 9400.1500, subp. 6, is based on applicable requirements based on language under existing Part 9400.1500, subp. 1. The requirements have been modified and appear as proposed Subp. 6. Language was added to clarify what happens if an operator leaves the system or facility where he/she had a conditional certificate and is based on current practice.

7. Part 9400.1500, Subp. 7. Suspension or Revocation of Conditional Certificate

Minn. Stat. § 155.75, subd. 4 references Minn. Stat § 144.99, which establishes the process MDH or MPCA must follow for suspension or revocation of a conditional certificate. These are existing requirements that are incorporated into rule language to inform regulated parties of the process MDH or MPCA will follow when taking these actions. It is reasonable to include a reference to these requirements to ensure regulated parties are aware of them.

8. Part 9400.1500, Subp. 8. Denial of or Refusal to Reissue Conditional Certificate

Minn. Stat. § 155.75, subd. 4 references Minn. Stat § 144.99, which establishes the process MDH or MPCA must follow for suspension or revocation of a conditional certificate. These are existing requirements that are incorporated into rule language to inform regulated parties of the process MDH or MPCA will follow when taking these actions. It is reasonable to include a reference to these requirements to ensure regulated parties are aware of them.

XVIII. LIST OF AUTHORS, WITNESSES AND EXHIBITS

A. Authors

Dianne Navratil, Prevention and Assistance Division, Minnesota Pollution Control Agency.
Mark Sloan, Drinking Water Protection Section, Minnesota Department of Health

B. Witnesses

MDH and MPCA anticipate that the proposed amendments will be non-controversial, and that no public hearing will be necessary. If these rules go to a public hearing, MDH and MPCA anticipate having the following witnesses testify in support of the need for and reasonableness of the rules:

1. Ms. Dianne Navratil, Prevention and Assistance Division (MPCA). Ms. Navratil is the principal author of the SONAR and will testify on the general need for and reasonableness of the proposed rules.
2. Mr. Mark Sloan, Drinking Water Protection Section. Mr. Sloan is a secondary author of the SONAR and will testify on the general need for and reasonableness of the rule.
3. Ms. Charles Thompson, Prevention and Assistance Division (MPCA). Mr. Thompson supervises the wastewater treatment facility operator certification program and will testify on the general need and reasonableness of the rule.
4. Ms. Yolanda Letnes, Municipal Division (MPCA). Ms. Letnes is the project rule coordinator and will testify on any Minnesota Administrative Procedures Act process questions.
5. Ms. Leah Hedman, Attorney General's Office. Ms. Hedman is legal counsel to the Minnesota Pollution Control Agency and will function in that capacity during any potential hearing.
6. Mr. Robert Smude, Drinking Water Protection Section (MDH). Mr. Smude is Supervisor for the DWP Administrative Unit
7. Ms. Anita Smith, Drinking Water Protection Section (MDH). Ms. Smith is the Rules Coordinator for the DWP Section
8. Ms. Patricia Winget, Ms. Winget is the MDH Rules Coordinator and Legal Counsel

XIV. CONCLUSION

Based on the foregoing, the proposed rules are both needed and reasonable.

Document dated September 9, 2011, was signed by Ed Ehlinger and Michelle Beeman (for Paul Aasen)

Ed Ehlinger, Commissioner
Minnesota Department of Health

Paul Aasen, Commissioner
Minnesota Pollution Control Agency

Attachment A. A Regulator's Perspective on Workforce Issues: Water and Wastewater Operators, 2008 American Water Works Association

Attachment B. Workforce Planning Holds the Key to Managing the Realities of Shifting Demographics in the 21st Century, 2007 Water Environment Federation

Attachment C. Task Force on Workforce Sustainability: Final Report, October 15, 2008

Attachment D. City Workforce Planning, League of Minnesota Cities (Printed 1/14/2011)

Attachment E. The Workforce Gap (Printed 1/20/2011)

chat room

Although we have no control over the aging population, we do have control over recruitment, retention, and succession planning.

—Teresa M. Boepple-Swider

A Regulator's Perspective on Workforce Issues: Water and Wastewater Operators

AS LARGE NUMBERS OF WATER AND WASTEWATER UTILITY EMPLOYEES RETIRE OR LEAVE TO SEEK OPPORTUNITIES ELSEWHERE, UTILITIES ARE LEFT TO FILL THESE POSITIONS AND ENSURE THAT THE EMPLOYEES' KNOWLEDGE IS NOT LOST FOREVER. JOURNAL AWWA EDITOR MARCIA LACEY CONDUCTED AN E-MAIL INTERVIEW WITH TERESA M. BOEPPLE-SWIDER, PROFESSIONAL CERTIFICATION SECTION CHIEF FOR THE NEW YORK STATE DEPARTMENT OF HEALTH, TO GAIN PERSPECTIVE ON HOW TODAY'S WORKFORCE ISSUES AFFECT PLANT OPERATORS.

LACEY: *There is a lot of talk about a shortage of water and wastewater operators in the next 5 to 10 years. Based on your experience, do you believe this shortage will become a reality?*

BOEPPLE-SWIDER: Yes! Not only do I believe that a shortage will become a reality in 5–10 years, I believe it is a reality now. Last year, the New York State Department of Health's Bureau of Water Supply Protection conducted an unofficial survey of New York State's small water system operators (those serving a population of 3,300 or fewer). This informal survey, which focused on operator demographics, was conducted at the conclusion of an operator training course that was offered through the operator certification expense reimbursement grant program. The grant is funded by the US Environmental Protection Agency (USEPA). The results showed that the average age of these operators was 50.9 years and that 48% of the respondents expected to retire in fewer than 10 years. These findings are similar to the results published in the 2005 Awwa Research Foundation study, "Succession Planning for a Vital Workforce in the Information Age." This study concluded that 50% of today's water and wastewater operators will retire in the next five to seven years.

In fact, just last month a chief operator called to tell me that he has been trying to hire an operator for several months and cannot find anyone who wants to work at his system. This operator stated, "I thought we had 5 to 10 years before we faced an operator shortage; I didn't think we would be facing this shortage today!" I then inquired about the system's succession plan as well as their recruitment and retention plans. All I heard was silence. Stories like this are becoming more and more frequent and are appearing in workforce articles published throughout the country.

This shortage is a reality for all professions within the water and wastewater industry. In the past five years, I have experienced difficulties in recruiting and retaining various professionals to work in the water supply regulatory arena. I have found that with each passing year it becomes tougher and tougher to find and retain qualified staff.

I feel that this shortage is the direct result of an aging workforce and the lack of recruitment, retention, and succession planning. Although we have no control over the aging population, we do have control over recruitment, retention, and succession planning. We need to dedicate resources to these areas now so that we can be more prepared to address the workforce crisis. Simply stat-

ed, without qualified staff we can't get our job done. If we can't get our job done, the protection of public health is at risk. A qualified workforce is not a commodity that is easily replaced and it needs to be valued, nurtured, and supported.

LACEY: *What do you feel is the biggest challenge operators face today?*

BOEPPLE-SWIDER: Based on my experience working with operators and from my vantage point as a regulator, I feel that the biggest challenge operators face is a lack of recognition and support for the role they play in protecting public health. Since coming to the operator certification program in 1997, I have heard from operators that they are not widely recognized as professionals and are undervalued for the service they provide. Also, operators have indicated that they lack the support they need to address aging infrastructure, succession planning, rate increases, and similar issues. Although there are two sides to every story, the industry is hearing this message and responding with tools such as board member training, information on succession plans, and asset management tools.

Overcoming these challenges is a challenge in itself, but it can be done through standardization and education. We are achieving standardization using USEPA's guidelines for implementing operator certification programs throughout the country. This positive step has not only assisted in standardization but also in advancement of the profession. Before becoming certified, operators in New York State are required to take educational courses with a set curricula, receive on-the-job experience and training, take a validated examination, and pass an onsite assessment conducted by a local health department. This standardization has elevated the profession of an operator in New York State. One challenge that remains is to educate decision-makers and the general public about the importance of this profession and the important role operators play in protecting public health. Once we achieve this goal, operators will be recognized and supported. Our operators are one of the most important forces in the protection of our water supplies and ultimately public health and must be recognized and supported for their very important role!

LACEY: *Do you feel there is or will be a problem recruiting and retaining operators now or in the future? If yes, what is the primary reason for this problem?*

BOEPPLE-SWIDER: Currently the industry is faced with the problem of recruiting and retaining operators, but I'm optimistic that this will improve in the future. One reason we are facing this problem is the fact that some systems lack the managerial capacity to operate efficiently. Without managerial capacity, systems are not operated like a business and do not have recruitment and retention plans (as well as succession plans). It is a challenge to recruit operators into the profession without recruitment plans. In addition, without retention plans, operators could find themselves in substandard work environments with low pay, lack of support, and lack of professional development. In these situations, the employer is not an "employer of choice," and the operator could not only leave the job but potentially leave the industry forever. This scenario would negatively affect all of us.

As mentioned previously, we have some control over recruitment and retention. By educating decision-makers, the managerial capacity of a water system can be improved, but systems need attention and resources now. In New York State, the Water and Wastewater Education and Outreach Committee was assembled to address these types of issues. This committee comprises stakeholders from the following groups: New York State AWWA section, New York Rural Water Association, New York State Department of

Do you have any advice on how to capture an operator's institutional knowledge before he or she walks out the door?

—*Marcia Lacey*

Health, New York State Department of Environmental Conservation, New York State Conference of Mayors, the Environmental Finance Center at Syracuse University, New York State Department of State, New York State Water Environment Association, RCAP Solutions (Resources for Communities and People), USEPA and USEPA Region 2, Association of State Drinking Water Administrators, certified water and wastewater operators, and engineering consultants.

The committee's first task was to develop a tool to recruit water and wastewater operators. The committee developed a New York State–specific operator career brochure and provided the brochure to high schools, vocational schools, science colleges, and unemployment offices in the state of New York. In addition, the committee developed a brochure template that can be used by any stakeholder nationwide to increase the number of certified operators in his or her state. There is no reason to reinvent the wheel. Anyone who would like a copy of the brochure template can contact me at the e-mail address listed at the end of this article.

LACEY: *Would relaxing certification requirements for entry-level operators be a solution to an operator shortage?*

BOEPPLE-SWIDER: Absolutely not. Certification standards are developed to provide operators with the basic knowledge, skills, and experience needed to work in this field and are based on the complexity of a water or wastewater system. We need to support our operators whether they are entry or senior level and provide the training, tools, and resources they need to perform their jobs. In fact, I believe that lowering the standards would devalue the profession and the important role operators play in protecting public health.

LACEY: *Do you feel that the lack of blanket reciprocity agreements among states is a barrier to operator certification? If yes, what is the major barrier?*

BOEPPLE-SWIDER: No. I believe that reciprocity is misunderstood. Many administrators of states' operator certification programs look at reciprocity on a case-by-case basis.

In the state of New York, reciprocity can only be handled on a case-by-case basis because of state-specific needs and the variation in operator certification classification levels. For example, the water quality issues in New York are not the same as those in Arizona. Therefore, state certification programs have to set training standards so that operators are provided with the training they need to protect public health in their state. I do not view reciprocity as a barrier to certification but rather as an assurance that operators have the state-specific knowledge, skills, and ability they need to operate a system and ultimately protect public health.

LACEY: *Do you have any advice on how to capture an operator's institutional knowledge before he or she walks out the door?*

BOEPPLE-SWIDER: Document, document, document. I learned this one the hard way. When I first started in the operator certification program, I didn't understand the importance of standard operating procedures and documenting the knowledge that individuals have. I did my best to learn from others but did not have the opportunity to take part in any formal knowledge-transfer process. Then one day I found myself in a position I never want to find myself in again. The most important person I consulted to get information about the operator certification program passed away suddenly. I was deeply saddened and shocked. I soon realized that the invaluable knowledge that this individual had was lost forever. At that point, I truly understood the value of knowledge transfer.

I tell this story to operators, elected officials, decision-makers, and others and hope that someone can learn from my experience. It is inevitable that knowledge will be lost if it is not captured. Therefore, it is essential to the continuity of system operations that this knowledge be captured before it is lost. This capture can be done in many ways. Methods that I widely use are written policies, written procedures, and cross-training of staff.

LACEY: *What do you think about having a retired operator work part time as the primary operator for a small or medium-sized water or wastewater system?*

BOEPPLE-SWIDER: I would support the use of retired operators for this purpose as long as all regulatory requirements, such as continuing education, due care and diligence, and minimum staffing levels, are met. I think this could be a great solution to the operator shortage problem. This model could be incorporated into a succession plan so that the system has technical capacity now and during the training period for the replacement operator.

LACEY: *What do you feel attracts operators to this industry?*

BOEPPLE-SWIDER: Operators have indicated to me that many things attract them to this profession including working in their community, providing a service to the public, working at a job that is different every day—the job is never boring—and always learning new things. Also, there are benefits such as a pension (for municipal operators), which is becoming extinct. In addition, there is opportunity to meet and collaborate with dedicated and passionate people and, ultimately, the priceless satisfaction and reward that go along with protecting public health. After all, water is essential to sustaining life.

LACEY: *What, if anything, would you change about this industry?*

BOEPPLE-SWIDER: I would change the attitudes and thoughts our stakeholders have regarding public water supplies. Can you imagine the day when stakeholders understand the value of water and what it takes to deliver it? Can you imagine having the support to implement full-cost pricing?

This lack of understanding is the root of many issues this industry faces. With support from the public, elected officials, decision-makers, and others, we could better address our aging infrastructure and workforce challenges. In addition, our systems as well as all industry professionals could have the tools and resources they need to perform all aspects of their jobs—technical, managerial, and financial.

We can make this dream a reality. Education and outreach coupled with strong alliances and partnerships are essential to achieving this goal. No single person, group, department, or association has the means or the voice to be heard on this subject. If our stakeholders are to hear our message, we need to speak with a unified voice!

Are you ready to be heard?

About the participant: *Teresa M. Boepple-Swider is the professional certification section chief for the New York State Department of Health, Troy. She is the program manager for operator certification, bottled and bulk water, backflow prevention device tester training, and certification programs and manages a $6.7 million grant to train small-water-system operators. A graduate of Clarkson University with a degree in engineering, she is the past chair of the AWWA New York Section's Education Committee and currently serves as chair of the Operator Issues Subcommittee, which is part of the Workforce Strategies Committee. She can be contacted at tmb03@health.state.ny.us*

Attachment B

Workforce Planning Holds the Key to Managing the Realities of Shifting Demographics in the 21st Century

Terry Brueck, President, EMA

ABSTRACT

The utility industry is about to undergo a dramatic transformation. Thanks to the realities of an aging Baby Boomer workforce and shifting demographics in the North American population, utilities are going to change significantly in the years ahead. Over the next 10-15 years, there will be a mass exodus of Baby Boomers to retirement and the private sector. In their place, utilities must embrace the new American workforce that is more likely to be younger, non-white, and female. This presentation will address the workforce challenges facing utility leaders and explore effective strategies and tactics to embrace these changes.

KEYWORDS

Workforce Planning, demographics, succession planning

INTRODUCTION

For most utility managers – indeed managers in all industries – their tenure has been primarily in an employer's market. A utility job has long been considered safe and secure. The salary and benefits have been more than competitive. As a result, our industry has stagnated in its development of recruiting and retention strategies and tactics. Ten years out, things will be very different as industries compete for a smaller and smaller pool of qualified employees. Without these strategies and tactics, utilities may not be able to compete.

Of course, this phenomenon is not unique to our industry. Many industries – particularly those in the public sector – will soon feel the effects of losing large numbers of talented individuals to retirement and some utilities will lose 30-50 percent of their current workforce to retirement within 10 years. Consider the fact (from a recent AwwaRF study) that half of today's water utility workers are over age 44 (four years older than the average US worker); the average retirement age for utility employees is 56; and retiring utility workers have worked an average of 24 years in the same utility.

The other major shift coming in the North American workforce is its growing diversity, as the number of Asian and Hispanic workers continues to grow rapidly. The percentage of Caucasians in the workforce will shrink from 74% to 52% while the percentage of Hispanic workers will grow from 10% to 25%. More than a fourth of the available workforce will be members of a minority group. In 2010, female candidates for employment will surpass male candidates by 6 million with 80% of women participating in the workforce outside of the home. Clearly, those organizations that adapt to these new realities – through more flexible,

more worker-focused policies such as parental leave and flex hours – will prosper while those that are slow to change may not survive.

Even the so-called 'traditional' workforce isn't going to be the same. Baby Boomers have always been work-oriented while Gen Xers have other priorities. They want visibility within the organization, seek involvement, and are concerned with being treated properly. This creates some obvious challenges for the utility industry. Driven by an entirely different set of values, Gen X will be drawn to the utility environment only if utilities are willing to alter their approach to hiring, managing, and retention. Do it right and the utility industry will thrive. Get it wrong and we will become a revolving door through which employees come and go.

UTILITIES' CHALLENGES ARE UGENT

It is not an exaggeration to say utilities are nearing a state of emergency in the areas of recruiting, training, and retaining the human resources they need to run their organizations. The urgent requirement to address these workforce issues is more critical now than it was three to five years ago.

- Utility demographics are more extreme than the general population trend and therefore the "people gap" will be more extreme than in other industries. In the 1970's, the EPA construction grants program provided funding for wastewater treatment plant construction. This funding has kept many operators and engineers employed for 25 to 30 years who are now reaching retirement age. This labor gap is already being felt by a number of both large and small utilities in the United States and Canada where the average age of the utility workforce exceeds that of the general workforce.

- The "people gap" is exacerbated by the utility industry not being as attractive to college students and young professionals as other industries. For example, the utility industry does not have the same attraction as working for NASA. Preliminary survey results of college students as part of the AwwaRF research project on recruiting, training, and retaining engineers and operators show that the culture and type of work prevalent in utilities is not viewed as interesting to them.

- The demands on the industry are growing simultaneously with this decline in potential workers. The need for utilities to meet more stringent regulations and address major infrastructure rehabilitation projects impacts the demand for skilled and technical workers. These issues require a workforce with higher technical skills and

knowledge and fewer physical skills appropriate to field laborers. The demand is for "knowledge workers."

- An era of "lean operating" has left utilities with outdated recruiting and selection practices. As a rule, utilities have been filling very few positions over the last ten years. Due to financial constraints, many utilities have dropped their programs for employee selection and development. Using outdated methods of "crowd control hiring" from the days of having an abundant number of applicants will not result in hiring staff with the technical skills and knowledge required by utilities today.

UTILITIES ACTION REQUIRED

Many utilities continue to talk about and acknowledge the necessity of taking action to address this impending crisis for knowledge workers, yet few are taking concrete steps to actually meet the crisis. This inaction is due in large part to not being sure which actions will best begin to address their particular situation.

How, then, do we adapt? What strategies can be employed that will truly make a difference in our ability to attract and retain the best talent available from Gen X and Gen Y to our industry? This presentation will explore the answers and available strategies, including:

- Recruiting and outreach
- Selecting and "on-boarding" of new workers
- Training and development
- Internships and apprenticeships
- Retaining and re-recruiting employees
- Compensation and rewards
- Coaching and mentoring
- Performance management
- Knowledge management and retention
- Work process review and redesign

- Career pathing
- Workforce flexibility
- Culture adaptability and diversity
- Leadership and accountability
- Talent development

Utilities will gain an understanding of how the practices of today differ from past practices in making these strategies successful.

Water Environment Federation®
Preserving & Enhancing the Global Water Environment

TASK FORCE ON WORKFORCE SUSTAINABILITY

Appointed by the WEF President, Adam Zabinski, May 21, 2008

FINAL REPORT

October 15, 2008

INTRODUCTION AND BACKGROUND

The water industry is facing a significant challenge caused by the changes in our society. Today's workforce is composed of about 145 million workers. The baby boomers (generally defined as those individuals born between 1946 and 1964) comprise the largest contingent of these workers. By 2010, half of these boomers will be between the ages of 54 and 64 with retirements expected to peak between 2010 and 2020.

Coupled with the pending retirements and exodus of employees from the water job sector is the potential labor shortage of skilled employees throughout the industry ranging from operators to engineers. The recent American Water Works Association Research Foundation (AwwaRF) report *A Strategic Assessment of the Future of Water Utilities* noted that:

- The pool of available, technically skilled workers is shrinking and the members of that pool may have different values.
- The water supply and sanitation sector is expected by the Bureau of Labor Statistics to experience an employment growth rate of 45% in coming years due to regulations, infrastructure growth, security, and customer demands.
- Due to the continual escalation of regulations and technological change, the nature of the work to be performed is increasingly complex.

Recognizing that workforce sustainability is of vital importance to members of the Water Environment Federation (WEF), in May 2008 WEF President Adam Zabinski formed the WEF Task Force on Workforce Sustainability. Appointed to this Task Force were the following members:

Raynetta Curry Grant (co-chair)
Eric Dodds (co-chair)
Raj Bhattarai
Dan James
Dr. Nancy Love
Kirk Rowland
Patty Settles
Tekla Taylor
Laura Watson

The Task Force was charged with the following duties:

- Inventory and define all workforce sustainability activities present and planned within the committees of the Federation
- Inventory and define all workforce sustainability activities ongoing with the Member Associations of the Federation
- Propose a priority for the workforce sustainability activities that are ongoing and planned based on the needs of WEF members
- Outline the opportunities WEF has for collaboration with others within the water industry and outside of the water industry in regards to workforce sustainability
- Coordinate the actions of the Task Force with the Planning, Products and Program Development (P3D) Working Group of the Board of Trustees (BOT) so that the P3D Working Group may recommend a strategy to the BOT on Workforce Sustainability.

This report is the result of the work conducted by the Task Force. Included in the report are prioritized observations and opportunities for the WEF Board to consider in formulating a strategy to address the issue of workforce sustainability.

NEEDS DEFINITION

A shortage of workers spurred by the gradual aging and retirement of baby boomers is beginning to affect all organizations across the nation and the water industry is no exception. As more and more baby boomers age and retire, the workforce shortage is projected to be even more acute in the next 10 to 15 years.

Approximately 76 million baby boomers are estimated to retire in large numbers in the next 5 to 10 years. The baby boomers make up about one-third of the total workforce in the U.S. Labor shortages in key industries will force a radical rethinking of recruitment, retention, flexible work schedules and retirement for baby boomers because there aren't enough young workers to replace them. Worker shortages are already apparent in as diverse areas as nursing, long-haul trucking, and engineering.

The water/wastewater sector is especially hard hit. Many of the water and wastewater treatment plants were constructed or expanded/upgraded in the 1970s and 1980s because the two major water regulations – Clean Water Act (1972) and Safe Drinking Water Act (1974)

were promulgated in the 1970s. Additionally, during the 1970s and 1980s, federal grants were available for construction of wastewater infrastructure and also for the training of the workforce, which spurred the expansion of the workforce during those two decades. The workers hired then have reached or are fast approaching retirement age. This will compound the problem in the water industry already burdened by the shortage from the effects of baby boomers retiring.

The number of baby boomers reaching retirement age between 2000 and 2015, as shown in Figure 1, is sobering.

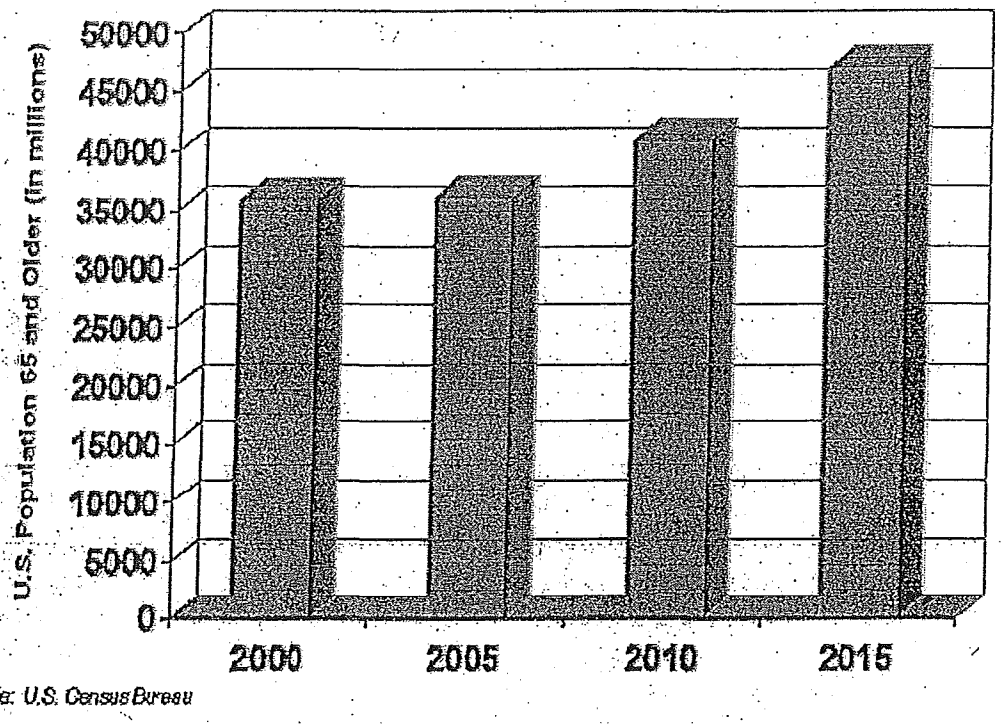

Figure 1 – Baby Boomers Retirement 2000-2015 (Source: U.S. Census Bureau)

According to the recent *Water & Wastes Digest* State of the Industry Report, the average water/wastewater professional has been working in the industry for 22 years. Almost one-third (30%) of 10,000 randomly surveyed subscribers to *Water & Wastes Digest* have been in the industry for 30 years or more. Additionally, 41.5% of respondents said they are between the ages of 50 and 59.

According to the recent Water Environment Research Foundation/American Water Works Research Foundation Study *Succession Planning for a Vital Workforce in the Information Age:*

- The current average age of water utility workers is 44.7
- The current average age of wastewater utility workers is 45.4

- The average age of all other workers in the nation is four years younger, approximately 41 years of age
- The average retirement age for utility personnel is 56
- It is projected that in the next ten years, 37% of water utility workers and 31% of wastewater utility workers will retire

According to the *AWWA 2007 State of the Industry Report*, the expected retirements of water utility employees over the next five years are quite dramatic as shown below:

- 33% of the Executives
- 30% of Management and Supervisory Employees
- 21% of Operators
- 14% of Engineers
- 13% of Purchasing Employees
- 7% of Scientists

The number of students graduating with a bachelor's degree in engineering dropped 25% between 1985 and 2001. A 2007 National Science Foundation report showed an 8% decline in civil engineering graduate student enrolment from 1992 to 2005. This is particularly disturbing at a time when the increase in population and demand for better quality and larger quantity of water requires engineers and other workers with advanced degrees.

According to the 2003 Congressional Budget Office study *Baby Boomers' Retirement Prospects: An Overview*, some of the baby boomers may not be as prepared for retirement as their parents were and may have to postpone their retirements by a few years. A larger proportion of previous generation workers were covered by guaranteed-benefit pension plans. Most of the baby boomers do not have access to such plans and are invested in private retirement plans. The current economic crisis might slightly delay the retirement prospects of some of the baby boomers. But this few years of delayed retirement by a small number of baby boomers will not offset the greater shortage caused by the coupling of the demand for more qualified workers. This shortage is expected to continue for an entire generation comprising of almost two decades. It is therefore imperative for our industry to immediately start planning for a sustainable workforce.

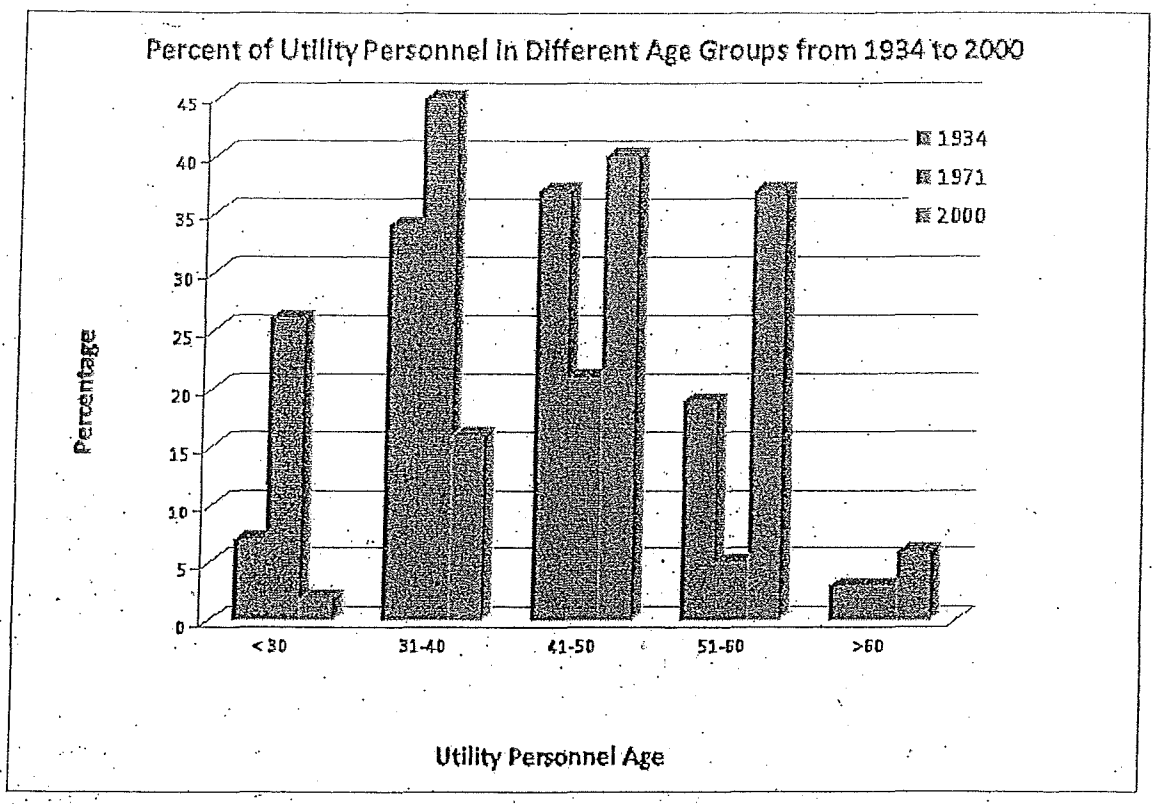

Figure 2 - Percent of Utility Personnel in Different Age Groups in 1934, 1971 and 2000

WEF COMMITTEE INVENTORY

Background

There are 45 identified committees that provide the substantive work of implementing the WEF Vision and Strategic Plan for water quality and reuse. More than 2,500 WEF members participate in WEF committee activities, developing conference programs, writing technical manuals and books, developing training materials and program content, and many other WEF program activities, such as serving on this Task Force.

Findings

For this Task Force, 16 of the committees were targeted for the inventory of WEF Committee activities related to workforce sustainability. The 16 targeted committees include: Academic, Collection Systems, Environmental Management Systems, Government Affairs, Manufacturers and Representatives, Membership, Municipal Wastewater Treatment Design, Operations Challenge, Plant Operations and Maintenance, Professional Development, Public Communications and Outreach, Publications, Small Community, Students and Young Professionals, and Utility Management. Of these, based on our research and inventory

efforts, the following 4 committees are generally the most engaged in the subject of workforce sustainability.

1. Utility Management (UMC)

   Workforce activities of the UMC have been focused in developing technical sessions and workshops at WEFTEC, the AWWA/WEF Joint Management Conference and publishing articles. Many of the technical sessions are joint efforts with the Professional Development Committee. Both the articles and sessions focus on identifying the problem and presenting example solutions implemented by utilities.

2. Professional Development Committee (PDC)

   As with the UMC, much of the work of the PDC has been in developing technical sessions for WEFTEC and the Joint Management Conference. They've also worked with the Public Communications and Outreach Committee and the Students and Young Professionals Committee to develop material for career and guidance counselors. PDC members have also been involved in development of career related material on the WEF website, including the Career Paths information.

3. Students and Young Professionals Committee (SYPC)

   The workforce related activity by the SYPC has been diverse in the form of content delivery on workforce planning issues. They've written articles for the WEF website, WE&T and the YP Newsletter, developed WEFTEC sessions, and sponsored webcasts. One of the most notable of these is the "Pipeline to the Future" webcast in November 2007 and the subsequent follow-up articles posted on the WEF website.

4. Public Communication and Outreach Committee (PCOC)

   Workforce related activities by the PCOC focus on providing information to students and other prospective recruits on the particulars of careers in the water/wastewater industry. This includes typical job descriptions in the "Job Resources" link on the website, brochures and posters to educate and generate interest, and working with high school career counselors to educate the public.

Other committees are beginning to look at how they can also become involved. For example, the Plant Operations and Maintenance Committee (POMC) is generating a series of articles on "What Works", to be published in the WE&Ts Operations Forum. These are written by utility operations and management personnel who have implemented workforce related programs, and the outcomes thereof. Also, members of the Collection Systems Committee (CSC) are gearing up to join other WEF committees in order to determine how they may assist.

MEMBER ASSOCIATION ACTIVITIES

Background

There are currently 81 WEF member associations (MAs) representing approximately 50,000 water quality professionals around the world. MAs are local (State or Regional) on-the-ground organizations that have the opportunity to interact closely with local operators, public and private sector professionals, and student and young professional organizations. In many cases, the MAs provide the only opportunity for training and education to those members that are unable to travel to WEF conferences or workshops.

MAs are diverse, with approximately 1/3 of the MAs employing professional staff and the remainder relying on support from volunteers. The activities in which the MAs are engaged also vary, depending on the size of the organization and available resources. For example, smaller MAs with limited funding are typically more focused on addressing singular priorities identified during their annual planning process. This focus is often driven by federal or state regulations affecting the water industry. On the other hand, some of the larger MAs, which are well funded and staffed, may distribute regular journals or magazines keeping members informed of relevant issues. Many of them support young professional organizations and may have active regional member sections. Larger MAs typically conduct more frequent meetings and educational workshops throughout the year and are able to address a broader spectrum of issues facing their members.

A representative cross-section of North American MAs was selected and interviews were conducted to evaluate how much emphasis each MA placed on the issue of work force sustainability, what activities the MAs were undertaking, if any, to address the issue, and what needs they may have in assisting their members with recruiting, retention, and succession planning.

Findings

The results of the MA interviews are provided in Attachment X. Several of the organizations acknowledged recruiting, retention, and succession planning as a significant issue facing their members. However, for the majority of the MAs interviewed regardless of their size, plans for addressing work force sustainability are either in their infancy, or have not yet been developed. There was an equal split between the organizations that had implemented some type of program to address work force sustainability issues, those that had begun discussions and are in the early stages of planning to address the issue, and those that had not addressed the issue at all. For many of the MAs that had not yet implemented programs, they expressed a desire to receive some form of assistance or guidance from WEF in developing strategies for their members, especially in cases where they do not have sufficient funding to dedicate to the issue at this time.

Challenges

There is a consensus among the MAs interviewed regarding challenges facing recruiting and retaining staff in the water and wastewater industries, including:

- Non-competitive wages and diminished benefits
- Poor image of the industry or working conditions
- Competing for staff against more attractive industries in most States
- Not a priority for some public officials
- Inability to attract good leadership within the utilities and lack of leadership training.
- Fundamental competencies needed to operate current technology
- Technical fields not encouraged in the high schools by career counselors
- Lack of technical staff in smaller communities where technologies are evolving beyond their level of training
- Lack of technical training for existing employees
- Viewed as a "job" and not a career
- Lack of trade school and junior college programs specific to this industry

Identified Needs

Many of the MAs interviewed, especially those with limited funding had similar requests or ideas when asked what WEF could do to support them on this issue. These included:

- A collaborative effort between WEF, AWWA and MAs to engage in discussions with educational leaders to address core competencies for field staff/operators and to encourage those individuals demonstrating an aptitude to enter the water and wastewater industries.
- Develop educational programs at the trade school and junior college levels for all levels of water and wastewater professionals.
- Form a group to study and address the issue of low pay and benefits in the industry
- Host seminars for educators to increase their awareness of the opportunities for students in water and wastewater
- Provide educational support and/or develop course curricula for technical training, especially for those staff that have not been trained on current technologies, to allow them to advance in their positions.
- Prepare PR tools for recruiting
- Tools to help the MAs and their members learn how to recruit, mentor, and train staff (templates or written guides)
- Development of leadership training programs
- Information/guidance on how to obtain grants or other forms of financial assistance for addressing work force issues and implementing proven programs

Successes

The Georgia Association of Water Professionals, a large MA with over 6,000 members, identified this issue as a top priority and in 2008, launched their website H2Opportunity. This program focuses on educational aspects associated with recruiting, retaining, and advancing water professionals and highlights career path opportunities in the water and wastewater industries. Mr. Jack Dozier, Executive Director acknowledged that the program has been highly successful, well beyond their original expectations.

The West Virginia Water Environment Association used Environmental Protection Agency (EPA) and Rural Utilities Service (RUS) funding to develop a fully staffed environmental training center which provides various classes, including advanced training. They also provide 2 and 3 day training courses during scheduled trade shows. Mr. Bill Cunningham, Secretary/Treasurer, stated that this has been very positive with respect to retaining staff and ensuring that the positions vacated by retiring professionals can be filled.

The Florida Water Environment Federation co-sponsored an initiative called *Florida Water Futures 2007*. Workforce issues were identified as a priority area in this report. As a result of this effort the Florida legislature approved funding to open a Banner Center that would be focused on providing training for water sector needs. Banner Centers were started in Florida in 2006 with the primary purpose of providing training for entry-level and experienced workers in certain high-value job sectors. The newest Banner Center addressing the water utility industry is expected to receive funding of at least $500,000.

OTHER ORGANIZATIONS ACTIVITIES

Background

Ongoing workforce sustainability activities within other national organizations that are active or involved in some way in the water and wastewater industry were investigated. The organizations selected were the American Water Works Association (AWWA), the American Water Works Research Foundation (AwwaRF), the National Association of Clean Water Agencies (NACWA), the Association of Metropolitan Water Associations (AMWA), Environmental Engineers for the Future (E^2F), the American Society of Civil Engineers (ASCE), the Association of Environmental Engineering and Science Professors (AEESP), and the National Academy of Engineering (NAE).

Findings

The bibliography makes it clear that there has been increasing attention among non-WEF organizations on understanding the workforce challenges of the water industry. Here, we summarize key recommendations from a variety of sources by outside organizations.

AwwaRF

AwwaRF has been quite active in identifying workforce challenges today and actions that can be taken to overcome those challenges. The AwwaRF report entitled *Strategies to Help Drinking Water Utilities Ensure Effective Retention of Knowledge* (Summer 2008; report No. 91220) focused on defining steps and concrete (rapidly deployable) strategies that would lead to knowledge retention in the water industry. Collaboration between utilities on these efforts is emphasized. A second report entitled *Workforce Planning for Water Utilities—Successful Recruiting, Training, and Retaining of Operators and Engineers* will be published Fall 2008 (report No. 91237). This report lists effective tools that are designed to jumpstart workforce planning efforts by identifying both the short and long term needs of the utility and the demographic of people available to fill those needs. The report identifies best practices for recruitment, training and retention in 9 key areas, and many of the successful practices are borrowed from other industries. They emphasize that recruitment tools must be adaptive so as to grab the attention of targeted populations (especially young people). Finally, the report draws attention to the need to shift organizational culture to accommodate (and retain) employees from more diverse groups.

Recently, AwwaRF signed a contract to fund the *Water Sector Workforce Sustainability Initiative.* This initiative is primarily focused on understanding a host of workforce-related challenges by identifying those factors that put the industry most at risk, understanding current organizational practices, and developing strategies that can be deployed at the utility, regional and national levels to counteract ineffective and risky (i.e., unsustainable) practices currently used in workforce management. A summit is being planned for November 2008 as part of this project.

NACWA/AMWA

Two handbooks were recently produced by NACWA and AMWA. The first handbook was entitled *The Changing Workforce – Crisis and Opportunity.* The second was entitled *The Changing Workforce – Seizing the Opportunity* (2006). The second handbook featured case studies from various utilities and information on best practices to address the workforce issue.

E^2F

E2F is a program designed to encourage students to obtain a Masters Degree in a field of relevance to the water industry, and to increase the number of talented professionals with advanced degrees to be applied in the water, wastewater or solid waste management fields. Students who are selected can choose to attend one of the partner environmental engineering programs across the nation, in return for a 3-year employment commitment. Although this program was started in the Southwestern US, members now come from larger public agencies and utilities as well as the larger consulting firms across the nation. The group is currently considering how to broaden the program to encourage internships at utilities as part of an effort to expand the program.

ASCE

ASCE was contacted and admitted to not having any major effort underway that addresses workforce sustainability challenges in the water industry. A survey of their website, however, does show that ASCE is heavily engaged in acting upon the NAE report highlighted below.

AEESP

In 2007, AEESP hosted a workshop as part of its biannual conference entitled Addressing the Shortage of Environmental Engineers in the Professional Pipeline. The workshop was attended by consultants, utility personnel and academics. This workshop reflected on the conclusion in the March 21, 2005 issue of *Fortune* magazine that suggested that there will be a 54% increase in the number of environmental engineering jobs over the next 10 years, the highest of all the listed professions. This demand will likely far outpace the pipeline of students being educated as environmental engineers. There is currently a tremendous demand for entry-level environmental engineers, although most are actively seeking employees who have obtained a masters degree in this field. At the same time, however, it is clear that fellowship/assistantship funding particularly at the Masters level is becoming quite limited. Indeed, MS enrollment today is less than half of what it was in the 1990's. The E2F program mentioned above was developed to directly address this shortage. Sadly, this year EPA eliminated its long standing EPA STAR fellowship program, reducing even further the amount of funding available to educate people at the graduate level in the water sector.

Several challenges were identified at this workshop that pertains to filling the pipeline in the water sector. Key items that have not been identified elsewhere in this report include:

- There is a rising conflict between the number of international students wanting to get green cards in the US and the number of H1B visa slots available. In 2006, the US could only complete about 50% of applications; those who didn't get in and ran out of time had to leave the country. As AwwaRF has shown that an important demographic for the future water industry will be from this international pool, loss of this potential workforce exacerbates the workforce shortage problem.
- The Millennial Generation (born between 1982 and 2000) is a group who: want to collaborate; must know big picture and their role; want to hear opportunity; crave positive feedback; and are dedicated to a larger overarching purpose. Those attending the workshop predicted that the Millenials will leap over Generation X (born between 1965 and 1981) and take over most of the leadership jobs currently handled by the Baby Boomers. This will very much change the workplace dynamic.
- The funding pipeline lags the demand. Federal fellowship funding is, at best, used to support 15% of the students graduating from environmental engineering programs. Research funding is decreasing. Teaching assistantship funding is decreasing as states reduce their support of higher education.

- Universities are trying to increase their Ph.D. productivity to meet ranking criteria while industry needs more MS students. These conflicts are exacerbated by the traditional practice by both communities (academics and practicing water professionals) to approach the problem from their own perspective with limited opportunities for input from the other side.

NAE

The NAE recently (2008) published a study entitled *Changing the Conversation – Messages for Improving Public Understanding of Engineering.* This report was based on a study that focused on the public's perceptions of engineering and included surveys and interviews of youths (9 – 11 year olds), teens and adults. The report found that most respondents had a positive impression of engineering but not a good understanding of what one did as an engineer. Respondents tended to focus their impressions on the notion that math and science were the focus and did not consider the creativity, teamwork and communication aspects that are so vital to engineering. This aspect of the report holds special importance for the water industry, which has a heavy focus on interfacing with the public sector and which is facing an infrastructure crisis for which creative solutions are needed. The report authors suggested changing the tone of the message about engineering to one of being a career path that demands innovation and produces outcomes that positively impact the lives of others, embraces creativity and involves bold new thinking.

Identified Needs

Among these reports, several themes were identified:

- We need to improve the public understanding of engineering and the water sector
- There is a need to provide incentives and other forms of funding for student education and faculty research in the water sector
- Many organizations are taking on similar tasks in establishing improved workforce principles and practices. To enhance the impact, it will be best if these organizations collaborate and share information.

OBSERVATIONS AND OPPORTUNITIES

Based on the inventory of activities, it was recognized that the workforce sustainability challenges can be categorized into three key categories.

1. ***Recruiting*** – Recruiting qualified workers into the water quality industry is essential to long-term workforce sustainability. Recruiting strategies focus on those areas that attract people into our industry.

2. *Retaining* – Once part of the workforce, it is imperative that employees are provided with the necessary mentoring, training, tools and incentives that will create an environment that promotes long-term sustainability. Retaining strategies focus on those areas that keep people in our industry.
3. *Remembering* – The aging workforce of the water quality industry represents a serious threat of vanishing institutional knowledge. Remembering strategies are aimed at maintaining the institutional knowledge in an organization after seasoned employees leave.

It became obvious from the inventory of activities that much has already been done to begin addressing workforce sustainability issues in the water industry. However, if the WEF Board of Trustees decides to more formally address the workforce sustainability issue, this Task Force believes that there is a need to capitalize on what has already been done, and to strategically move forward to address the many layers of this complex issue. To this end, the Task Force identified the following seven prioritized observations and suggested opportunities geared to showcase success stories, provide benchmarks and guidance for developing programs, empower the MA's to effectively recruit and develop water professionals in their own geographic region and to partner with academia, public agencies and other entities to maximize our very finite resources.

1. *Organizational Structure* – Create an organizational structure within WEF to support workforce sustainability issues. The focus of this structure is to align and coordinate activities related to workforce sustainability with the appropriate WEF committees.

2. *Continue Existing Programs* – Continue development and promotion of Technical Sessions, Specialty Conferences, webcasts, articles, etc. related to workforce sustainability. These are all excellent resources for those already in the industry. Having an organizational structure to coordinate such activities will help capitalize the results of such efforts.

3. *Information Access* – Develop an online portal/website dedicated to workforce sustainability topics. This should be a very robust, interactive online site that can be utilized as a means for showcasing workforce sustainability best practices. It can also be utilized to provide templates, ideas, training tools, guides, and list resources which organizations can use to build on. WEF's new website may facilitate implementation of this opportunity.

4. *Public Recognition/Education* – Develop a collaborative public relations campaign to improve public perception of the water industry. The perception potential employees have of our industry is key to being not only an employer of choice, but also an industry of choice. The goal should be to bring sexy to the water industry, just as the television show "CSI" merged sexy with forensics.

5. *Training and Education Support* – We need to fundamentally shift the way we train people for this industry to meet the more complex, broader challenges the industry

faces. Working together with other professional organizations to seek funding to support training and education needs is key.

6. *Organizational Collaboration* – Collaborate with other professional organizations within the industry such as AWWA, NACWA, ASCE, AEESP, etc. in order to maximize resources and benefits.

7. *Professional Recognition* – Develop an award or other form of recognition for educators and utilities that collaborate in developing programs that lead to increasing the number of students who pursue a future career in the water quality profession.

Additional Considerations

It should be noted that while the Task Force believes that workforce sustainability is a serious challenge facing the water industry, there are several additional considerations that warrant mentioning in this document.

- The workforce shortage challenge stems from the large population of baby boomers leaving the workforce and a smaller pool of workers ready to take their place. Some demographic studies indicate that future generations may be larger and thus there is a potential that the workforce shortages may be temporary.

- There is a growing interest towards water sustainability in the world. This interest may result in a paradigm shift that provides much more focus on water issues worldwide than recent history has provided. This potential emphasis on water issues may impact the workforce sustainability issues – potentially negatively and positively.

Appendix A

WEF TASK FORCE ON WORKFORCE SUSTAINABILITY
Appointed by the WEF President, Adam Zabinski, May 21, 2008

BACKGROUND

Our industry is facing a significant challenge caused by the changes in our society. The Baby Boomer Generation is generally defined as those individuals born between 1946 and 1964. During this period, 76 million Americans were born. Today's workforce is composed of about 145 million workers. Boomers comprise the largest percentage of these workers. Due to the large number of boomers in the workforce, the Bureau of Labor Statistics projects that by 2008 there will be 16 million more older workers than there were in 1998 – a 37 percent increase. By 2010, half of these boomers will be between the ages of 54 and 64. As a result, retirements from the workforce are projected to peak between 2010 and 2020.

Over the years, the age distribution of the United States population has undergone significant changes. Twenty years after the baby boomer generation was born, there was a significant increase in the number of skilled workers that actively participated in the workforce. This generation has been responsible for much of the growth in the nation's economy over the past 30 years. Today, there is concern that as this generation of workers begins to retire there will not be enough new workers to replace them.

Consider these facts from a recent Water Environment Research Foundation study:

- The current average age of water utility workers is 44.7
- The current average age of wastewater utility workers is 45.4
- The average age of all other workers in the nation is four years younger, approximately 41 years of age
- The average retirement age for utility personnel is 56

It is projected that in the next ten years, 37% of water utility workers and 31% of wastewater utility workers will retire.

The members and committees of WEF have been engaged in the issue of workforce sustainability during the past 3-4 years. This is evidenced by the program tracks developed during WEFTEC and our Utility Management Specialty Conference as well as Webcasts and subcommittees throughout the Federation that have focused on topics such as "Brain Drain", "Developing Mentoring Programs", "Managing Knowledge Transfer", "Recruiting Professionals to Our Industry" and the list goes on and on.

Presently, the following WEF Committees are engaged in at least one aspect of workforce sustainability and include: Utility Management, Student & Young Professionals, Professional Development, Plant Operations & Maintenance, Public Communication and Outreach, Small Systems and Collection Systems.

THE OPPORTUNITY

Workforce Sustainability is a "Hot Topic" for the Federation and is important to our members. Given that several activities are presently ongoing throughout the Federation on this issue, we should take the opportunity to inventory these activities and prioritize the work being done in the most effective and efficient manner. Furthermore, the issue of workforce sustainability is not unique to the water industry – it is a national phenomenon facing all industry sectors. Therefore, WEF should explore if and how we should collaborate with others on this issue to enhance the service and products for our members concerned with workforce sustainability.

TASK FORCE ON WORKFORCE SUSTAINABILITY

WEF has developed a Task Force on Workforce Sustainability, whose charge is to:

(1) Inventory and define all workforce sustainability activities present and planned within the committees of the Federation.
(2) Inventory and define all workforce sustainability activities ongoing within the Member Associations of the Federation.
(3) Propose a priority for the workforce sustainability activities that are ongoing and planned based on the needs of WEF members.
(4) Outline the opportunities WEF has for collaboration with others within the water industry and outside of the water industry in regards to workforce sustainability.
(5) Coordinate the actions of the Task Force with the Planning, Products and Program Development (P3D) Working Group of the Board of Trustees (BOT) so that the P3D Working Group may recommend a strategy forward to the BOT on Workforce Sustainability.
(6) The Workforce Sustainability Task Force will sunset following the BOT Meeting at WEFTEC 2008.

Members of the Task Force of Workforce Sustainability:

Co-Chair: Raye Grant (Utility Management Committee)
Co-Chair: Eric Dodds (S&YP and Public Communication & Outreach Committees)

Patty Settles (Professional Development Committee)
Kirk Rowland (Collection Systems Committee, HOD delegate)
Laura Watson (Plant Operations & Maintenance Committee)

Tekla Taylor (WEF member very passionate about this issue)
Dr. Nancy Love (Academic Committee)
Raj Bhattarai (WEAT Past-President)
Dan James (WEF House of Delegates)

Appendix B

Inventory of Workforce Sustainability Activities

WEF Committee Inventory

Activity/Article	Committee/Owner	Delivery Mechanism	Audience	Date of Develop/Pub.
	Academic			
No reported activities	Collection Systems			
Work with Utility Management Committee to address workforce sustainability topic	Environmental Management Systems			
	Government Affairs			
No reported activities	Long Range Planning			
	Manufacturers and Representatives			
No reported activities	Membership			
No reported activities	Municipal Wastewater Treatment Design			
	Operations Challenge			
Articles series submitted to Ops Forum starting September 2008	Plant Operations and Maintenance	Operations Forum	WEF Members	Fall 2008/Sring 2009
In progress	Professional Development			
Career Paths resource on WEF website	Public Communication and Outreach	WEF website	Public	Current
Making Waves	Public Communication and Outreach	Brochure/Poster	Public/High School	2005/Current
Career Development Occupational Briefs for High School Counselors	PDC/PCOC	Career Counselor	High School Students	Nov-07
No reported activities	Publications			
No reported activities	Small Communities			
Generational Differences in the	Students & Young Professionals	YP Summit	YPs	May-08

Workforce				
Unleashing Your Inner Hendrix (mentoring can help YPs)	Students & Young Professionals	WE&T Column	WEF Members	Sep-08
Pipeline to the Future: Critical Success Factors in Attracting, Developing, and Retaining Your Future Water Quality Leaders	Students & Young Professionals	WEBCAST	YPs and HR Depts.	Nov-07
Article Series follow-up to Pipeline Webcast - http://www.wef.org/MembershipCareers/MembershipInformation/MAResourceCtr/Pipeline+to+the+Future.htm	Students & Young Professionals	Web	WEF Members	Nov 07 to current date
Book Review - quarterly a book is reviewed to help YPs in the workforce - "So You're New Again: How to Succeed When you Change Jobs	Students & Young Professionals	YP Connections - Newsletter	YPs	Apr-07
Bridging the Generational Divide	Students & Young Professionals	WE&T Column	WEF Members	Sep-04
Meet Your Way to Success	Students & Young Professionals	WE&T Column	WEF Members	Aug-05
"Pipeline to the Future"	Students & Young Professionals/CH2M HILL	Webcast	Public	Nov-07
An Integrated Philosophy for the use of Technology to Attract, Develop, and Retain Technical Talent: Perspectives of a Young Professional and Senior Consultants	Students & Young Professionals/CH2M HILL	WEFTEC Session	WEFTEC Attendees	Oct-06
Recruiting and Retaining Young Professionals: A Viewpoint from Young Professionals in North Carolina and Alabama	Students & Young Professionals/CH2M HILL	WEFTEC Session	WEFTEC Attendees	Oct-07
Recruiting and Retaining Young Professionals: Part II - A Viewpoint from Our National Young Professionals	Students & Young Professionals/CH2M HILL	WEFTEC Session	WEFTEC Attendees	Oct-08
	Utility Management			

Committees NOT inventoried for the Workforce Sustainability Task Force
Air Quality and Odor Control
Automation and Information Technology
Awards
Conference Local Arrangements
Conference Site
Constitution and Bylaws
Disinfection
Ecology and Aquatic Resources
Groundwater
Industrial Wastes
International Coordination
International Program Committee
Laboratory Practices
Literature Review

Other Organizations Workforce Transition Activities

Activity/Article	Committee/Owner	Delivery Mechanism	Audience	Date of Develop./Pub.
AWWA				
AWWA's 2007 State of the Industry Report	AWWA	Report	Wide	2007
Succession Planning for a Vital Workforce in the Information Age	AWWA	Article	AWWA members	2005
The Shrinking Workforce: Hype or Crisis?	AWWA	Article	AWWA members	2005
Mapping Your Course to a Successful Workforce Plan Seminar	AWWA	Seminar	Seminar attendees	
Succession Planning is Success Planning	AWWA	AWWA Annual Conference	Conference attendees	
Succession Planning for Leadership: New Mgmt Challenges Ahead	AWWA	AWWA Annual Conference	Conference attendees	2008
NACWA				
NACWA 2008 Winter Conference to Feature Innovative Workforce Programs as Keys to Success	NACWA	Clean Water Advocate Article	Utilities	2008
The Changing Workforce…Seizing the Opportunity: An AMWA/NACWA Handbook	AMWA/NACWA	NACWA Publication	Utilities	2006
AWWARF				
Workforce Planning for Successful Organizational Change	AWWARF	Manual	Utilities	

Succession Planning for a Vital Workforce in the Information Age	AWWARF	Article	Utilities	2005
Workforce Planning for Water Utilities - Successful Recruiting, Training, and Retaining Operators and Engineers to Meet Future Challenges	AWWARF	Article	Utilities	
Strategies to Help Drinking Water Utilities Ensure Effective Retention of Knowledge	AWWARF	Article	Utilities	
Organizational Development Needed to Implement a Knowledge Management Strategy at Water Utilities	AWWARF	Article	Utilities	
AMWA				
The Changing Workforce - Crisis & Opportunity	AMWA	AMWA Publication	Utilities	
EPA				
EPA investigation of possible national task force for workforce issues.	EPA	Association of Boards of Certification Conference Workshop	Industry Professionals	Jan-08

WEF Workforce Transitions Activities

Activity/Article	Committee/Owner	Delivery Mechanism	Audience	Date of Develop./Pub.
WEF Committee Work				
Career Paths resource on WEF website	PCOC	WEF website	Public	Current
Making Waves	PCOC	Brochure/Poster	Public/High School	2005/Current
Career Development Occupational Briefs for High School Counselors	PDC/PCOC	Career Counselor	High School Students	Nov-07
Generational Differences in the Workforce	SYPC	YP Summit	YPs	May-08
Unleashing Your Inner Hendrix (mentoring can help YPs)	SYPC	WE&T Column	WEF Members	Sep-08
Pipeline to the Future: Critical Success Factors in Attracting, Developing, and Retaining Your Future Water Quality Leaders	SYPC	WEBCAST	YPs and HR Depts.	Nov-07

Article Series follow-up to Pipeline Webcast - http://www.wef.org/MembershipCareers/MembershipInformation/MAResourceCtr/Pipeline+to+the+Future.htm	SYPC	Web	WEF Members	Nov 2007 to current date
Book Review - quarterly a book is reviewed to help YPs in the workforce - "So You're New Again: How to Succeed When you Change Jobs	SYPC	YP Connections - Newsletter	YPs	Apr-07
Bridging the Generational Divide	SYPC	WE&T Column	WEF Members	Sep-04
Meet Your Way to Success	S&YPC	WE&T Column	WEF Members	Aug-05
"Pipeline to the Future"	WEF S&YPC/CH2M HILL	Webcast	Public	Nov-07
WEF Magazines and Newsletters				
What Are You Doing Now To Ensure Knowledge Retention?	WEF Publications	Utility Executive	Subscribers	July/August 2007
Listening, the Doorway to Employee Commitment	WEF Publications	Utility Executive	Subscribers	January/ February 2006
Leading the Change: One Utility's perspective on the changing work force and how to deal with it	WEF Publications	Utility Executive	Subscribers	May/June 2005
Succession Planning and Leadership Development: Your Utility's Bridge to the Future	WEF Publications	Utility Executive	Subscribers	November/ December 2005
Work Force Planning for the Early Millennium	WEF Publications	Utility Executive	Subscribers	March/April 2004
Recruiting Tomorrow's Work Force Today	WEF Publications	Utility Executive	Subscribers	July/August 2004
Creating Your Own Pool of Certified Plant Operators	WEF Publications	Utility Executive	Subscribers	November/ December 2004
Nurturing Future O&M Leaders: A utility's effort to groom operations and maintenance staff for leadership positions offers an example for other organizations	WEF Publications	WE&T	WEF Members/Others	Aug-06
Filling the Employment Gap: Utilities need to master the art of hiring and retaining employees who fit	WEF Publications	WE&T	WEF Members/Others	Feb-05

Is Distance Learning a Good Fit for Your Organization?	WEF Publications	WE&T	WEF Members/Others	Feb-05
Trading Places and Transferring Knowledge: As older workers begin to retire in large numbers, water and wastewater utilities must encourage mentoring to retain "institutional memory"	WEF Publications	WE&T	WEF Members/Others	Oct-05
Operator Certification: How State Limits on Reciprocity Limit Career Choices	WEF Publications	WE&T	WEF Members/Others	Oct-05
An Engineering Mind is a Terrible Thing to Waste	WEF Publications	WE&T	WEF Members/Others	Nov-05
Outsourcing Affects Civil Engineers, Too	WEF Publications	WE&T	WEF Members/Others	Jul-04
Educating Tomorrow's Water Professionals	WEF Publications	WE&T	WEF Members/Others	Sep-04
Joint Management Conference Sessions				
**For the past five years, Joint Management Conference has included numerous sessions on workforce transition issues. Information on the sessions is provided here as examples.*				
Session TUE4: Success with Succession Planning	WEF/AWWA	Joint Management Conference Session	Conference Attendees	Feb-06
Session WED2: Success with Succession Planning II	WEF/AWWA	Joint Management Conference Session	Conference Attendees	Feb-06
Session MON2: Be a Change Agent!	AWWA/WEF	Joint Management Conference Session	Conference Attendees	Feb-05
Session WED1: Standards of Excellence: vision, Values, and Ethics	AWWA/WEF	Joint Management Conference Session	Conference Attendees	Feb-05
Session 5: Emerging Issues	WEF/AWWA	Joint Management Conference Session	Conference Attendees	Mar-04
Session 23: Human Resources	WEF/AWWA	Joint Management Conference Session	Conference Attendees	Mar-04
WEFTEC Technical Sessions				
**For the past five years, WEFTEC has included numerous sessions and workshops on workforce transition issues. Information on the sessions is provided here as examples.*				
Session 30: Knowledge Management: Tools Others Are Using to Stay Smart	WEFTEC 2007	WEFTEC Session	WEFTEC Attendees	Oct-07
Session 90: Getting 'Em and Keeping 'Em - Best Practices in Recruitment and Retention	WEFTEC 2007	WEFTEC Session	WEFTEC Attendees	Oct-07

Session 107: Preparing for Tomorrow's Workforce: Integrating Succession Planning, Employee Development and Knowledge Management	WEFTEC 2007	WEFTEC Session	WEFTEC Attendees	Oct-07
Session 31: Organizations of the Future: From Succession Planning to Distance Learning	WEFTEC 2006	WEFTEC Session	WEFTEC Attendees	Oct-06
Session 52: Education: Where Are and Where We're Going	WEFTEC 2006	WEFTEC Session	WEFTEC Attendees	Oct-06
Session 10: Baby Boomer Bust - Succession Is a Must	WEFTEC 2005	WEFTEC Session	WEFTEC Attendees	Oct-05
WEFTEC Workshops				
**For the past five years, WEFTEC has included numerous sessions and workshops on workforce transition issues. Information on the sessions is provided here as examples.*				
Workshop 107: Strategic Workforce Planning for Leaders at all Levels: Integrating Succession Planning and Knowledge Retention	WEFTEC 2007	WEFTEC Workshop	WEFTEC Attendees	Oct-07
Workshop 108: Manage Your Organization's Knowledge Assets Before They Walk Out of the Door	WEFTEC 2006	WEFTEC Workshop	WEFTEC Attendees	Oct-06
Workshop 206: Your Workforce - Coming, Staying, Changing, Going, Gone!	WEFTEC 2005	WEFTEC Workshop	WEFTEC Attendees	Oct-05
Workshop 118: Sustaining Your Utility's Future: Say 'Hello' to Your New Workforce	WEFTEC 2004	WEFTEC Workshop	WEFTEC Attendees	Oct-04
Coming in 2008				
Using the Water Is Life, and Infrastructure Makes It Happen™ program to get out positive messages about water-related professions	WEF-Public Communications	Variety of campaign materials	Public	Jun-08
Web focus/information center on workforce transition challenges and information	WEF - Public Communications	WEF Website	WEF members and others	Jun-08

Appendix C

Member Association Interview Results

Member Association	Current Activities	Priorities	Needs	Additional Comments
Atlantic Canada Water Works Association	Nothing formally	Important but not a priority. Their goals currently are to best serve members focus on education courses - 1 major annual conference various workshops and seminars.	NA	
Florida Water Environment Association	No formal plans laid out. Informally calling on older members to mentor	Urgent level, but too overloaded to address this. They are focusing on conservation and reuse now.	Not sure how WEF can help	
Georgia Association of Water Professionals	Developed a website : H2Opportunity. Also developed engineering science labs; developed brochures, present at WEF and AWWA conferences. Use Water for People as a draw for YPs. Hard to benchmark, but in the last year they have had student chapters form at the various colleges and Universities.	This was identified as their #1 priority in 2007. They dedicated funds and also used volunteers to set up the website. Their priority for the coming year is leadership training - how to develop their people for leadership and transferring knowledge. They are looking at this on a state level.	How do they address the challenge of lower wages? Getting people certified would be a good retention approach. They would be willing to help in developing a "tool box" that WEF members could use to assist in leadership training, retention, recruiting, etc.	They are interested in sharing this concepts with other organizations so that they can cost effectively build on this. They feel it is very successful, and went beyond their expectations. Their concern is that they want to ensure the WEF and AWWA coordinate this effort jointly.
Iowa Water Pollution Control Association	Training programs - specialty conferences - training courses - Science teachers competition held annually - Distributed Water Resource	This is a priority to them, but they feel that many public officials don't see this as a problem.	WW is not fascinating to students, not seen as a "sexy" career. They need help with messaging/PR.	They are losing people to other states, not seeing many YPs and YPs are not helping to recruit. Viewed as a job, not a career.

	textbooks to high schools.			
Mississippi Water Environment Association	Not doing a lot, but started a student chapter last year to bring young people into the association	This is a priority, however, they only have 135 members and one annual conference.	Need help with training materials, guidance, support, grant money guidance, grant money	They would like to see communication among state organizations improve so that there could be more emphasis placed on this and their resources pooled to make it more successful.
Missouri Water Environment Association	Targeted this issue in their recent visioning session and will be reviewing and implementing a plan in the near future.	YP Committee is a priority and they plan to reach out to more colleges and trade schools.		
North Carolina Water Environment Association	Their public education committee stepped up to get into schools and science fairs. They have seminars, conferences, and forums.	Their priority is to assist members on education needs, tied to public education to get kids into the field. They feel that the kids need to be excited about it and see it as a "sexy" career.	They need tools and templates to capture knowledge : including how to recruit, how to train, promote and retain. Anything WEF can do to show them how to mentor staff. They would like written guidance.	Most of this is done at the utilities, i.e., recruiting and mentoring, but they would like to support their members. They indicated that pay and benefits need to be better.
Oklahoma Water Environment Association	Have not addressed this issue yet.	They are a small group and don't see it as a priority, nor do they have the manpower to address it.	They are trying to get online operator training, but they need help with educational materials.	

Texas Water Environment Association	This will be a priority issue for their discussion in their upcoming Annual Meeting in December.	Recruiting, avoiding burnout, low pay/low benefits	Would like to see a collaborative effort with AWWA where they can look at the recruiting, educational and training needs for field staff.	issues/challenges/opportunities they see are (1) low pay and lower benefit structure not attractive to recruits (2) high school students are not prepared or appropriately educated to be able to operate modern day equipment and to be able to pass the operators exams (3) need to get more technical programs promoted in the high schools, technical trade schools and junior colleges. (4) work with HS and college counselors to be able to assess student aptitude for water industry
Water Environment Association of Ontario	2 years ago, started youth student chapters at the Universities and Colleges. There are 5 full chapters, and 3 in the works. They are trying to get YPs out there in the field before the senior staff retire.	This is a big priority for them. They will base upcoming conference on topics that address this issue.	They would like WEF to "Canadianize" the WEF source books.	
Water Environment Association of Utah	Created the "Brain Drain" presentation for outreach to local universities and presented to Young Professionals at the 2008 annual conference.	This is a priority and they are tracking tools available for addressing work force retention and generational issues		They are tracking the trends and statistics with the professional staff, but have not seen as much information available on the affect on operations staff.
Virginia Water Environment Association	They are not too involved with this issue.	They have not focused on this issue.		
West Virginia Water Environment Association	Used EPA and RUS funding to develop a fully staffed environmental training center which provides various classes, including advanced training. They also provide 2 and 3 day training courses during their trade shows.	The key priority is continuing education for maintaining licenses. This encourages certification advancement and is key for retention. This fills the ranks of the people that are retiring.	Some of the smaller communities are having challenges getting staff that are technically competent with respect to new technologies. They would like to begin conducting technical training sessions in these areas. It would be helpful if WEF could provide	Another big challenge is the fact that their wages are non-competitive. That is where the training and career growth potential need to be provided.

			some course outlines or guidance on what should be covered in the training (for example, operating auto samplers, operating electrical equipment, etc.). They also would like some help with PR materials for the industry that takes focus off of the non=competitive wages.	

LEAGUE OF MINNESOTA CITIES

City Workforce Planning

If your city has a high number of employees nearing retirement, you're not alone. Data from the Public Employees Retirement Association (PERA) shows:

- Almost 37 percent of city employees are over age 50 (excluding police and firefighters);
- Nearly half of Minnesota's cities have a workforce where at least 25 percent of their employees are over age 50;
- In 150 cities, at least half of the employees are over age 50; and
- In some cities, the number of employees nearing retirement is small but still represents a key part of the city's workforce.

The League strongly encourages city officials to analyze your city government workforce needs for the years ahead and to take actions that make your city an attractive employer. Competition will be intense for the workers who can fill workforce gaps left by retiring baby boomers—other local governments, state government, businesses, and nonprofits all face similar challenges.

Those who choose city government service have a unique opportunity to make an immediate, tangible, meaningful difference in the lives of Minnesotans on a daily basis. They provide essential services we all rely upon, and build the communities that make our state great. Sharing this message is a key component of attracting new people to city government and is a growing area of focus for the League.

Workforce Planning Toolkit

The League's Workforce Planning Toolkit contains information on five major steps each city should begin working on now in order to be prepared in the next few years for the upcoming labor shortage: 1) problem identification; 2) reinvention/Retooling; 3) employee recruitment efforts; 4) employee retention strategies; and 5) knowledge transfer.

View the entire Workforce Planning Toolkit (pdf) *(Link to: http://www.lmc.org/media/document/1/workforceplanningtoolkit.pdf)*

- View Section 1: City Employees & Workforce Planning—Getting Started (pdf) *(Link to: http://www.lmc.org/media/document/1/workforceplanningtoolkitsectionone.pdf)*
- View Section 2: Problem Identification & Reinvention/Retooling (pdf) *(Link to: http://www.lmc.org/media/document/1/workforceplanningtoolkitsectiontwo.pdf)*
- View Section 3: Employee Recruitment & Retention (pdf) *(Link to: http://www.lmc.org/media/document/1/workforceplanningtoolkitsectionthree.pdf)*
- View Section 4: Knowledge Transfer (pdf) *(Link to: http://www.lmc.org/media/document/1/workforceplanningtoolkitsectionfour.pdf)*

Rehiring City Retirees

As cities struggle with large numbers of baby boomer retirements, many are considering rehiring recent retirees on a reduced work schedule. This can be a great option, but there are legal issues to consider to keep your city out of trouble.

View Rehiring City Retirees (pdf) *(Link to: http://www.lmc.org/media/document/1/rehiring_retirees.pdf)*

Your LMC Resource

With all that's on your plate, it can be easy to put off tasks related to workforce planning. League staff is here to help you take those first steps to get moving, and to answer more complex questions around what cities can and cannot do to attract and retain new workers.

Contact Laura Kushner
Director, Human Resources
(651) 281-1203 or (800) 925-1122
lkushner@lmc.org *(Link to: mailto:lkushner@lmc.org)*

Join the Conversation

The League maintains a member forum (listserv) for Minnesota city officials with human resources responsibility. Learn tips, exchange ideas, and connect with your colleagues.

Read more about Member Forums *(Link to: http://www.lmc.org/page/1/member-forums.jsp)*

Other Workforce Planning Resources

Learn more about workforce planning resources from Minnesota and other states:

- State of Minnesota workforce planning guide *(Link to: http://www.mmb.state.mn.us/ag-serv/wfp)*
- State of Wisconsin workforce planning guide *(Link to: http://workforceplanning.wi.gov)*
- State of Washington Workforce Planning Guide *(Link to: http://hr.dop.wa.gov/workforceplanning/wfpguide.htm)*

Learn more about general workforce planning issues from these helpful web sites:

- International Public Management Association for Human Resources(IPMA-HR) *(Link to: http://www.ipma-hr.org)*
- Society for Human Resource Management *(Link to: http://www.shrm.org)*
- Workforce Management *(Link to: http://www.workforce.com)*

Attachment E

The Workforce Gap

Water agencies and associations face a future full of "dirty jobs" and a shrinking pool of qualified candidates.

By Ed Ritchie
Comments

Article Tools

RSS Share Save Print Email

Create a Link to this Article

As the recession drags on and high unemployment rates continue, it should be good news that both the drinking water and wastewater industries are anticipating a growing demand for workers in a wide variety of positions and skills. Or is it? As agencies confront issues such as an aging workforce, new technology, limited budgets, federal mandates, and crumbling infrastructure, many are seeing this as both an opportunity and an urgent matter that needs effective programs and policies to avoid a serious workforce gap.

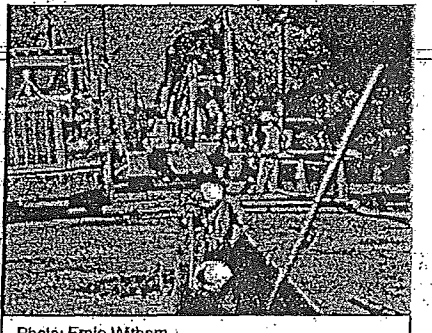

Photo: Ernie Witham

Additional Article Content

- Making the Best Workplace for Aging Employees

You may also be interested in...

- The Blogger
- Lessons in Efficiency
- Inspiring by Example: The Water Use Efficiency Plan
- Drought and Demand-Side Water Conservation
- Balancing Elements

Keeping up with retirement and an aging workforce are major concerns for members of the American Water Works Association (AWWA), Denver, CO, according to Greg Kail, director of public affairs, and he notes that the association's 2010 State of the Industry report identifies workforce issues as one of the top five topics of concern for AWWA members. In fact, it's a problem that has been rising in importance after industry research from 2005 revealed that the average age of water utility workers was 45 years old, and the typical retirement age was 56.

"That gets our attention when about 40% of our workforce is retiring in the next 10 years," notes Kail. "The impact of the recession may delay some retirements, but people of retirement age aren't getting any younger, and when the economy does recover we will need a new workforce to continue to deliver water services." In a study done by the AWWA and the Water Environment Federation (WEF) Alexandria, VA, the highest level of need for non-administrative employees was in the area of certified plant operators in both drinking and wastewater plants.

Certified Operators Worth More Than a Dime a Dozen

Filling positions at the operator level is an ongoing challenge for Cherita King, a human resource manager at The Water Works Board of the City of Birmingham, AL. The agency serves 600,000 people in five counties within the Birmingham area, and, with a history that dates back to 1873 (just two years after the founding of Birmingham), it would be reasonable to assume that the utility wouldn't have to work too hard to attract qualified applicants. After all, these jobs offer stability and growth potential. Nonetheless, the recruiting program begins with making high school students aware of the opportunities at the Water Works Board.

As one part of the Board's outreach, it runs a summer Young Water Ambassadors program that employs 100 high school juniors and seniors over a period of six weeks. Students learn about various facets of the water system, including detecting and repairing leaks, reading water bills and water meters, and testing water quality in the Water Works EnviroLab. "Right now, I would say the majority of our certified water operators are baby boomers and close to retirement," says King. "And because certified operators for the water industry don't come a dime a dozen, we are trying to recruit people and get them trained so we have people in place to take over."

The next step for King will be an apprentice program to help ensure that new employees attain certification. King's department is in the development stage of a program and getting help from the Employment & Training Administration, a federal agency that administers government job training and worker dislocation programs, federal grants to states for public employment service programs, and unemployment insurance benefits. These services are primarily provided through state and local workforce development systems with offices in 42 states (www.doleta.gov).

Offering much more than a temporary summer class, the apprentice program will provide information to junior college and high school students that lead directly to a true job experience. "We feel like the apprenticeship program is a great opportunity and also we are looking at partnering with some local junior colleges to develop a curriculum around

the water industry," says King. "Then, students could get the skills we need prior to coming into employment at our water treatment facilities, because our greatest challenge is in getting operators certified."

High School Students Find Green Jobs

The ability to pass a state's certification exam is critical to developing a viable staffing program, according to Jane Downing, associate director of Drinking Water Policy at the EPA's New England Office, US EPA Region 1, Boston, MA. Moreover, Downing notes that the EPA shares the concerns of AWWA members and has identified vocational colleges as an excellent resource for attracting and educating a new generation of water industry workers.

"We have a terrific program in Massachusetts that has been put together through the work of Massachusetts Water Works Association and the Massachusetts Department of Environmental Protection," says Downing. "There are a number of vocational and technical high schools throughout Massachusetts, and now there are even high schools that have drinking water operator training programs. So we have had high school students that were able to take the exam for certification, and we think that's terrific that the high school has a curriculum in an area that can place students in green jobs."

Vocational and community colleges aren't the only educational resource for the next generation of water system operators. Many state colleges have programs, such as the California State University Sacramento, College of Engineering and Computer Science, where the Office of Water Programs provides distance learning courses for persons interested in the operation and maintenance of drinking water and wastewater facilities. "This is the premier training program for operators in the US," says Kurt Ohlinger, associate director at the Office of Water Programs. "We publish all the training manuals used in our courses and throughout the country, and training programs and community colleges." The Office sells about 50,000 training manuals per year, and the distance learning program enrolls about 14,000 students per year.

Students come mostly from the US and Canada, but the program has a percentage of international students as well. The training is available as correspondence or computer-based courses and is designed as direct preparation for taking state certification exams. The course schedule allows up to six months to finish, but Ohlinger notes that he has seen students finish in as fast as six to eight weeks. Just six weeks to train for a certification test that leads to employment as a plant operator in a stable industry would seem to be an attractive option, but the opportunities don't stop at operations, according to Frank Loge, a professor of engineering at the University of California at Davis, CA, and the director for the Center for Water-Energy Efficiency.

Major Revisions to the Clean Water Act?

Loge predicts that issues related to the aging infrastructure will drive growth in construction and technology, and importantly, there will be a demand for new skills and education. "The vast majority of distribution systems, the pumps, the tanks, and anything associated with a water utility that was built more than 20 years ago and designed with that lifespan in mind, needs to be replaced," says Loge. "Then there is the EPA, which has revised the Clean Water Act in the last five to 10 years and will probably make a couple of major revisions soon that are related to distribution systems." Next Page >

Topics: Infrastructure,Human Resources,Public Outreach

What Do You Think?

Post a Comment

Be the first to tell us what you think!

Post a Comment

Not a subscriber? Sign Up

Username:

Password:*

Comment: