Department of
Water
County of Kaua'i

Water has no substitute.....Conserve it

April 24, 2006

Honorable Louis Abrams, Chair
and Commission Members
Charter Commission, County of Kaua' i
4444 Rice Street. Suite 235
Lihu'e, Hawai'i 96766

RE: Proposed Kaua'i County Charter Amendment re: Salary Commission

Dear Chair Abrams and Charter Commission Members:

I support the proposed amendment to the Kaua' i County Charter ("Charter") whereby the recommendations of the Kaua'i County Salary Commission ("Salary Commission" or "Commission") would become effective unless vetoed by three-quarters of the Kauai County Council.

Presently, pursuant to Charter Sec. 29.02B, the salaries of all appointed and elected officers within Kaua'i County must be established by ordinance adopted by the Kaua'i County Council. As such, unless the Salary Commission's recommendations are adopted as an ordinance, the Commission's recommendations have no effect.

As a member of the Board of Water Supply, we strongly support amending the Charter for the following reasons:

- The proposed amendment would provide a salary method allowing the Salary Commission independent authority to fix the salaries of appointees and elected officials, yet preserving the Council's oversight in the County's budget requirements. Often the setting of appointees and elected officials salaries is a highly sensitive and politically charged matter, therefore, entrusting this function to an independent, citizen appointed panel allows an objective, non-political decision-making body to formulate competitive salary compensations for the various administrative appointees and Council.

- The hiring and retention of qualified people will become increasingly difficult with the current compensation differential and low unemployment rate. The County cannot expect to compete with the private sector for qualified individuals, if the duties and responsibilities of the administrators are not adequately compensated.

- The current "pay inversion" does not promote incentives to commensurate County civil service employees to apply for department-head and deputy department-head positions. Yet, these senior management personnel possess a tremendous wealth of knowledge, experience and understanding of the government process which would be beneficial to any administration. Increasingly, this pay inversion will negatively impact the County by moving qualified personnel away from the top positions in the organization.

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- With the current rate of unemployment on Kauai (and in the State) being so low, the pool of qualified individuals is very limited or almost non-existent for certain skilled positions. Non-competitive salaries make the situation even more difficult.

- Finally, the BOW just lost its' Manager, mainly due to the salary disparity issue. The initial recruitment period has not been successful and current national trends recognize a crisis in finding qualified individuals in the majority of water jurisdictions.

As a volunteer Board Member, my concern is that if we cannot attract and hire a qualified manager to supervise the department properly, then my position on the Board is meaningless.

Therefore, it is my heartfelt responsibility to stress the utmost importance of immediately addressing this issue as it applies to the Board of Water manager opening and at the same time to address the salary disparity issue for the entire county.

My short term on the BOW has been a tremendous learning experience and I can say that with new technology systems, water quality monitoring and testing standards, new homeland security issues, managing a diverse workforce and planning upgrades for the island infrastructure for the next 20 years, its clear to me that the job skills needed today have changed drastically just within the last 2.5 years that I have served on the Board. Surely, the compensation must be addressed for both the pay disparity issue and for the new skills required to do the job.

Thank you for the opportunity to submit written testimony in support of amending the Kaua'i County Charter. I humbly request for your consideration and support of the subject Charter Amendment proposal.

Respectfully submitted,

Myles Shibata Sr.

Myles S. Shibata
Kaua'i County Water Board

MSS/sk

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BY MYRON A. OLSTEIN

Managing the coming brain drain

AS EMPLOYEES RETIRE AND THE AVAILABLE LABOR POOL DIMINISHES, UTILITIES CAN USE TOOLS SUCH AS WORKFORCE PLANNING AND KNOWLEDGE CAPTURE TO SAFEGUARD AGAINST THE LOSS OF INSTITUTIONAL KNOWLEDGE AND ENSURE OPTIMAL OPERATION DURING THIS TRANSITIONAL PERIOD.

In 2003, the Research Advisory Council of the AWWA Research Foundation (AwwaRF) recognized that Baby Boomers were starting to reach retirement age and that this generation would be followed by a generation only about half its size. In addition, the council was concerned about the increasing shortage of engineers. As a result of these observations, AwwaRF decided to fund a study of these and related issues titled Succession Planning for a Vital Workforce in the Information Age. Shortly after funding was awarded, the Water Environment Research Foundation (WERF), noting that wastewater utilities shared these concerns, elected to co-fund the study.

A survey conducted as part of the succession planning study confirmed the Research Advisory Council's concerns. Findings indicated that 35% of current utility employees will be eligible to retire in 10 years. Attrition rates, currently at 7%, are expected to rise to 8%. Because the people retiring are the most senior employees in the utility, these retirements will result in a serious brain drain and an accompanying loss of institutional knowledge. A study of a similar situation in the electric utility industry estimated that as much as 80% of the useful operating knowledge was "tacit," i.e., knowledge that is known by users but not documented (EPRI, 2004).

In addition to these problems, the survey also identified related concerns. Utilities are becoming more complex, but competent new hires are hard to find. Human resource (HR) managers complain that they are at a disadvantage and are forced to hire from the bottom of the labor pool.

Not all the news is bad, however. In every period of major generational changes, opportunities are present. A reduction in staffing because of retirements can allow utilities to "rightsize" and to rationalize positions and organizational structures. Properly handled, this transition period will be a time

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when new, improved ideas can be implemented with less resistance from the old guard.

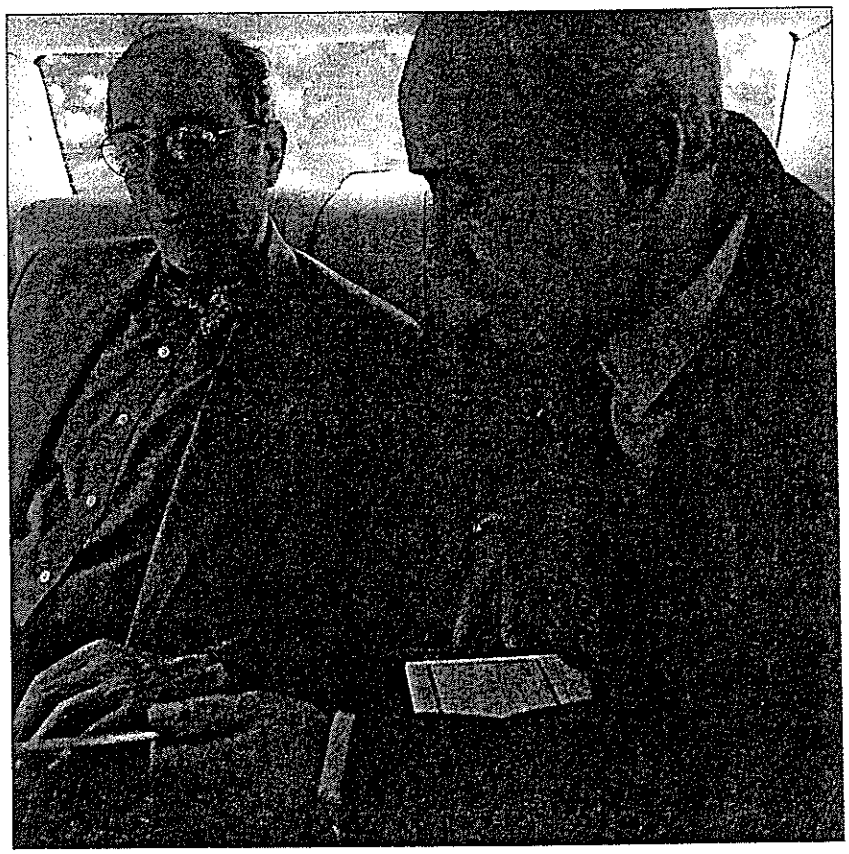
NATIONAL DEMOGRAPHICS SPOTLIGHT FUTURE LABOR CONCERNS

A review of national demographic data highlighted some of the trends that will affect every sector of US industry in the coming years. Many of these trends will have significant consequences, especially for water and wastewater providers. Organizations that fail to start planning today for anticipated changes in technology, economy, and society will be hard-pressed to meet their strategic goals.

Average age of workforce is on the rise. In the coming years, a massive retirement wave will have industries scrambling for capable workers. According to the US Department of Labor's Bureau of Labor Statistics (BLS), the average age of the civilian labor force in the United States has been rising steadily since 1990, increasing from an average of just under 38 years of age in 1990 to 40 currently and to more than 41 projected for the year 2020 (BLS, 2002a). The fastest-growing segment of the US workforce consists of individuals over 55, who are expected to represent 20% of the workforce in 2020.

Water and wastewater utility workers tend to be even older than the national average. The survey conducted for the succession planning study indicated that the average age of water utility workers is 44 and that of wastewater utility workers is 45.

Number of available workers is declining. Not only is the average age of the workforce increasing, but the number of workers available to replace retirees is low. The Baby Boomers (people born from 1946 to 1964) number about 76 million, whereas Generation X (those born between 1965 and 1980) numbers only about 46 million. National demographic data indicate that the labor gap between replacement needs and workers is increasing. The HR field and its executives are understandably concerned about how the work now performed by a large workforce can be accomplished by a smaller labor pool.



The fastest-growing segment of the US workforce consists of individuals over 55, who are expected to represent 20% of the workforce in 2020.

Minorities, females, and immigrants in the US workforce are increasing. Minorities (defined by the BLS as Black, Hispanic, and Asian) are forecast to become a larger component of the national workforce, approaching 50% by 2050. The representation of minorities in the utility workforce is slightly higher than in the US workforce as a whole. However, females represent approximately 47% of the US workforce and are estimated to be only 19% of the utility workforce. According to data from other sources (Sum et al, 2003), the US-born workforce is declining year to year, and a high level of work-age immigration is resulting in an overall increase in the national workforce.

In summary, the US workforce is getting older and more diverse. Although the utility workforce is both older and slightly more diverse than the US workforce, it is significantly underrepresented in terms of gender diversity.

Workers increasingly move from job to job. Another trend fueling the push for workforce planning is the tran-

TABLE 1 Data required for three approaches to workforce planning

Approach	Internal Data Required	External Data Required
Workforce	Workforce age Length of service Wages and salaries Occupation categories Number of positions Work characteristics Diversity Technology used by position	Labor pool supply Employment and job creation trends for relevant occupations Industry trends for related work performed in the public and private sector Wages and salary trends Demographic trends Regulatory changes Technological innovations
Workload	Workforce age Length of service Occupation categories Amount of work performed by position Level of services provided Work characteristics Diversity Technology used by position	Demographic trends Area population growth Regulatory changes Technological innovations Customer expectations
Competency	All data required in the workforce and workload approaches plus training approaches and skill assessment	All data required in the workforce and workload approaches plus local education levels and skill set of labor pool

TABLE 2 Division of responsibilities for the workforce planning process*

Activity	Leadership	Human Resources Department	Line Managers
Conduct environmental scan/SWOT†		•	
Conduct strategic planning	•	•	
Conduct workforce planning	•	•	•
Assess/forecast workforce supply		•	
Assess/forecast workforce demand		•	
Identify competencies	•	•	•
Establish benchmark/envision desired workforce	•	•	•
Analyze workload gap/surplus		•	•
Analyze competency gap/surplus		•	
Create staffing plans		•	•
Measure results		•	
Perform process re-engineering			•
Conduct succession planning		•	
Develop retention strategies		•	
Develop effective managers	•	•	•
Enable/evaluate performance	•	•	•
Share success and communication	•	•	•

*Table is based on the International Personnel Management Association model.
†SWOT—strengths, weaknesses, opportunities, and threats

sient nature of Generation X compared with Baby Boomers. Workers today will hold about 5.6 different full-time jobs between the ages of 18 and 64. Generation X defines job security as transferability and seeks to obtain a breadth of experience from a variety of jobs. Employers must plan for this new mentality by extensively documenting operating procedures and increasing training.

Water and wastewater utilities will need more workers. According to BLS data, the water supply and sanitary industries (including wastewater, irrigation, and sanitary services) will experience the greatest amount of employment growth. This growth rate is projected to be 45% within the public utilities industry between 2000 and 2010. A number of factors are driving the need for more water and wastewater utility workers.

- Stricter regulatory standards will force water supply and sanitation services to acquire more equipment and people in order to meet higher measures of environmental compliance.
- As noted at the 2003 AWWA Water Security Congress, securing water sources and treatment facilities from bioterrorism and sabotage has emerged as a new responsibility for water providers.
- Population growth, especially as it relates to areas experiencing increasing numbers of new housing developments, requires the expansion of both water and wastewater services.

At the same time, national data trends indicate that many of the needed skills for the water and wastewater industry will be in short supply. Engineers will be increasingly difficult to attract because of short supply and competition from private technology firms. In general, skilled labor shortages will continue (BLS, 2002b).

WATER AND WASTEWATER UTILITIES SURVEYED

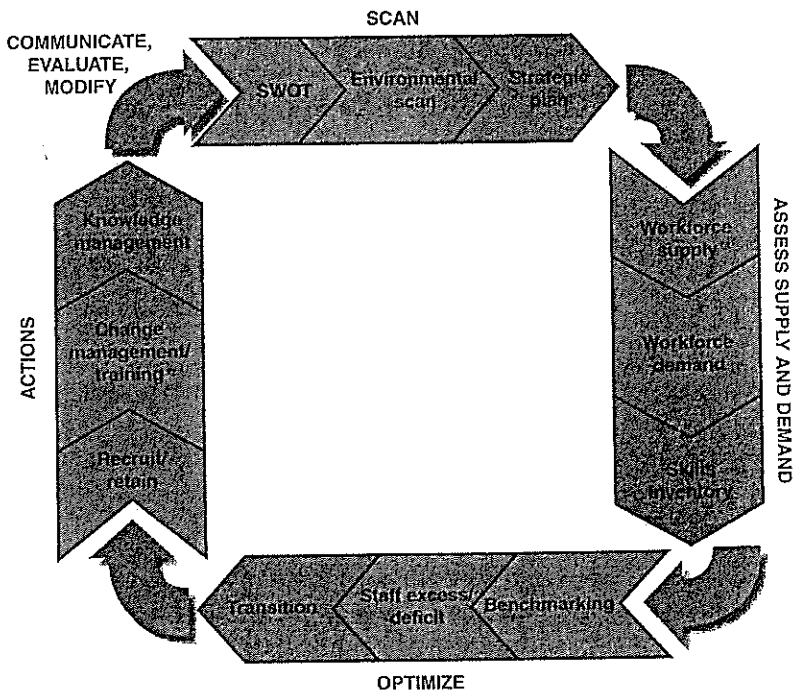
Additional data spotlighting workforce trends in the utility sector were obtained from two surveys

conducted in conjunction with the succession planning study. The first survey questioned more than 400 individuals who had recently retired from positions at water or wastewater utilities. The second survey focused on retirement trends from the utility perspective.

Many utility workers retire as soon as they are eligible. The survey of recent retirees confirmed anecdotal information that had surfaced during discussions with utility HR personnel. They had reported that most utility employees tend to retire soon after reaching eligibility. Most utility retirement plans allow for retirement at age 55 with an appropriate number of years of service. The average age of the recent retirees is slightly more than 56 years of age. Another important survey finding was that the number of years of service with the same utility was more than 24.

Utility survey included mostly medium and large utilities. An advisory group composed of utility executives helped frame and review the utility survey. The survey was sent to the 400 largest utilities in the Water:\Stats database, the 160 WERF members, and 10 additional organizations. Of these 570 utilities, 126 responded. This sample was somewhat biased toward medium and large utilities. Aside from the relative absence of small utilities, however, the survey pool was fairly representative in terms of geography, scope of service, and governance.

FIGURE 1 12-step workforce-planning model designed specifically for utilities



SWOT—strengths, weaknesses, opportunities, and threats

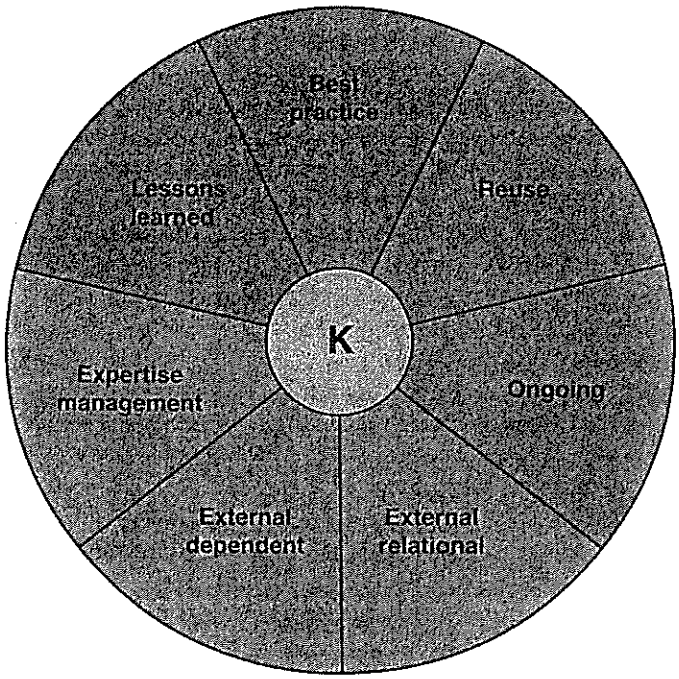
Survey results included the following findings:

- Utility baseline attrition rates, which have been running at 7% per year, are expected to climb to 8%.
- Potential retirements in five years (weighted) are expected to total 22% of the current utility workforce.
- Potential retirements in 10 years (weighted) are forecast at 35%.
- Nearly three quarters of responding utilities (74%) reported having no plan for dealing with retirements (although 9% of respondents claimed to be working on such a plan).
- For those utilities that did have a plan for dealing with retirements, the most common approach involved training.
- Median training hours per full-time equivalent employee per year were fewer than 20.
- Some positions, e.g., operators, field maintenance workers, and first/front-line supervisors, were being vacated at twice the rate of other positions.
- Utilities reported that the positions most difficult to replace were managers, operators, and first/ front-line supervisors. Some of these are the same positions being vacated at high rates.

The survey also tackled a number of topics, including early retirement programs, merit pay, reasons for difficulties in replacing employees, barriers to succession and leadership planning, and similar topics. In addi-

Organizations that fail to start planning today for anticipated changes in technology, economy, and society will be hard-pressed to meet their strategic goals.

FIGURE 2 Circle of Knowledge



KNOWLEDGE SECTORS

- *Ongoing*—Current knowledge peers need to coordinate each other's efforts.
- *Reuse*—Historical knowledge that can be reused to make subsequent work cheaper, faster, or clearer.
- *Expertise Management*—Easy method for finding the right person with the right knowledge quickly.
- *Lessons Learned*—A repository of ideas and observations about the best method for accomplishing a task.
- *Best Practice*—A repository of corporate preferred methods of accomplishing certain tasks or functions in a low-risk, high-quality manner.
- *External Dependent*—Knowledge from authoritative sources such as codes, standards, and outside experts.
- *External Relational*—Knowledge from customers and other stakeholders that is current and will guide others on best approaches to build or sustain mutual relations.

Voeller, 2003

tion, when utilities were asked to rate their level of technology, only a third of respondents ranked their level of technology as "high."

WORKFORCE PLANNING CAN HELP UTILITIES MANAGE TRANSITION

The advisory group of utility executives met twice to discuss the issues confronting the industry. Also in attendance at these sessions were representatives from George Mason University (Va.); the University of Kansas; the National Center for Construction Education and Research (Fla.); and the American Federation of State, County, and Municipal Employees (Washington, D.C.)

Members of the advisory group discussed the various aspects of succession planning from their own perspectives. Local governments owned all of the utilities in the advisory group, and members felt that government rules made certain aspects of succession planning difficult. To help address these concerns, the advisory group advocated an integrated approach to workforce planning specifically designed for utilities.

Workforce planning defined. According to the International Personnel Management Association (IPMA), "Workforce planning is the strategic alignment of an organization's human capital with its business direction. It is a methodical process of analyzing the current workforce, identifying future workforce needs, establishing the gap between the present and future, and implementing solutions so the organization can accomplish its mission, goals, and objectives" (IPMA, 2002).

Workforce planning offers a process that integrates long-term strategic planning with a review of an organization's work and human capital. It gives employers the tools they need to anticipate demographic changes and prepare accordingly to continue to meet strategic goals. A workforce plan can help an organization inventory its current knowledge, skills, and abilities; determine how these elements fit into its long-term work plan; and identify gaps in its ability to meet future obligations and conditions.

A comprehensive workforce plan outlines resources needed, such as training or acquiring personnel with the specific skills that the organization currently lacks. The aspect of workforce planning of greatest importance to both management and HR personnel is the ability to maintain a predictable or manageable flow of talent despite the challenges created by external and internal forces.

External and internal forces will always influence an organization's strategic direction and the human resources needed to achieve goals. Through the workforce planning process, an organization periodically evaluates the effect of these forces on its strategic goals and develops a plan of how to proceed under different potential conditions. Ultimately, the workforce planning process should lead to an action plan to secure the appropriate human resources to meet anticipated changes in technology, economy, and society.

Workforce planning involves three approaches. Workforce planning is not a static process. A workforce plan

is a model for future decisions and should be reviewed periodically to ensure that it still fits with the organization's environment and strategic goals. Because strategic planning greatly influences the development of a workforce plan, the workforce planning process should be integrated with the organization's strategic planning process whenever possible.

There are three approaches to workforce planning: workforce, workload, and competency. Usually a combination of the approaches is used to develop a comprehensive workforce planning model for an organization.

Under the workforce approach, the organization examines its current workforce and occupations and projects the number and characteristics of jobs and the number of employees needed to fill them at a specific point in the future. To determine workload needs, the organization defines the amount and type of work it anticipates handling at a specific point in the future and uses this information to project the number of resources (people and skills) needed to perform that work. Under the competency approach, the organization identifies sets of competencies aligned with its mission, vision, and strategic goals. The competency approach assumes that the organization has already considered workforce and workload and can focus not only on the number of people but also on the competencies employees must master for organizational success.

Each of these approaches involves different types of data that can help determine the preferred approach for a given utility. Table 1 summarizes the different data requirements as defined by IPMA (IPMA, 2002).

Workforce planning responsibilities are shared. Although the HR department plays a major role in workforce planning, personnel throughout the organization must participate and help guide the process if it is to succeed. Table 2 (based on the IPMA model) identifies the responsibilities within the organization for the various components of the workforce planning process.

Step-by-step workforce planning model. A 12-step workforce planning model developed specifically for utilities combines appropriate elements of each of the three approaches (Figure 1). The model is divided into four areas.

Scan. In this first step, the utility begins by assessing strengths, weaknesses, opportunities, and threats. For utilities, a common strength is that they tend to be good places to work (e.g., the survey of recent retirees indicated that many had been with their utility for 24 or more years). In addition, utilities have competitive retirement offerings (e.g., three out of four utilities still have defined-benefit retirement plans). For government-owned utilities, one weakness is that government ownership places limits on the competitiveness of starting salaries and succession and leadership planning.

Next, the utility scans the environment to identify external and internal forces that will affect its goals and operations. These forces include increases in retirements and attrition levels over the next 10 years, difficulties in replacing engineers, and the gender diversity gap. The utility may need to revise its strategic plan to accommodate these factors. However, the succession planning survey indicated that most utilities don't have a workforce plan or are relying on training that is at low levels. In reality, half of the utilities train less than 20 hours per full-time equivalent (utility wide), and the median value is 20 hours. Not only is this very little training, but if the rules on safety training are followed, those alone should account for 20 hours per year (bi-weekly session s are required).

Assess supply and demand. For utilities, the workforce supply picture in the near term is not a rosy one. Most workers are likely to retire shortly after achieving eligibility. An additional 35% can retire in 10 years, and attrition is expected to go up to 8%. As for workload demand, the BLS has forecast a significant increase in demand for utility workers because of growth and increasing levels of regulations.

The next step also entails an assessment of skills and competencies. The competency levels needed in the utility workforce are likely to increase as utilities become more automated. Utility survey results indicated that only one third of utilities currently rank themselves as "high tech."

Optimize. To meet the challenges of the changing workforce, utilities must "rightsize," i.e., be as streamlined as possible while maintaining efficient operation. Today's utilities can establish benchmarks based on data and performance measures that are much more readily available than they were previously. With higher levels of retirement and nonretirement attrition in the coming decade, utilities need to identify desired target staffing levels now.

Utilities must also identify staff excesses and deficits. Although setting target staffing levels is useful, the utility must also identify the practices that need to be implemented to support efficient staffing levels. As utilities rightsize, each position should be analyzed to see if it is needed (50% of utilities report that they conduct regular position assessments), and the organizational structure should be evaluated to ensure that it supports a rightsized utility and optimized operation.

Minorities are forecast to become a larger component of the national workforce, approaching 50% by 2050.

Act. Given the workforce environment utilities will face in the coming years, the ability to recruit and retain leadership is even more important. Some 45% of utilities report difficulty in replacing employees, and 25% believe that governmental rules limit succession planning options. Management and training are also key elements in creating a topnotch workforce. Nearly 74% of utilities do not have a succession plan, and only 21% have mandatory training of more than 20 hours per year.

Through effective knowledge management, utilities can help ensure that institutional and operational knowledge is not lost as workers retire or move to other industry sectors. The research institute investigating succession planning in the electric utility industry estimated that more than 80% of useful operating knowledge is tacit, i.e., generally understood but not documented (EPRI, 2004). Utilities also rely heavily on their operations and maintenance (O&M) manuals, with 75% reporting that the manual constitutes their documentation of operating procedures. The following section highlights strategies for successfully managing a utility's institutional and operational knowledge.

KNOWLEDGE CAPTURE SAFEGUARDS TACIT KNOWLEDGE

Study recognizes need to capture knowledge. During the succession planning study, one issue that came up time after time was the loss of tacit knowledge that would accompany the imminent wave of retirements. Tacit knowledge is employee know-how that is not documented and, in most cases, not verbally transferred. Given the length of time that many utility workers work together and utility reliance on O&M manuals as the source of procedures, it is reasonable to estimate that 80% of useful operating know-how is tacit knowledge. In addition to a standardized approach to knowledge management, utilities need a method of knowledge capture, i.e., a way to identify and document tacit knowledge within a short time frame. Furthermore, utilities require a methodology unique to their operations and circumstances. Whereas classical knowledge management techniques recommend ignoring infrequent activities when capturing knowledge, utilities face the challenge of infrequent events (such as floods and other natural disasters) that are important but not likely to be well documented.

Utility methodology was pilot-tested. A methodology was developed and pilot-tested at the Frederick County Sanitation Authority (FCSA), a water and wastewater utility in northwest Virginia. The first step was identification of all O&M processes. A process was defined according to the classic definition used in re-engineering: a group of tasks that has a beginning and end, a single owner, and typically, suppliers and customers. Approximately 600 processes in water and wastewater O&M were identified; it was estimated that if all administrative, financial, and customer-related activities were included, the total number of processes for a combined water and wastewater utility would reach 1,000.

Processes were ranked according to risk using a three-component approach: (1) level of documentation, (2) likelihood of a problem escalating if not corrected early, and (3) effects across processes (i.e., the extent to which a problem in the process affected other operations). The top 10 processes were then mapped by groups of four to six people. The teams were a mixture of owners and customers and of varying ages. The older, more experienced people described how the processes were carried out, and through their participation, the younger people were thereby trained. As the knowledge involved in successful process completion was identified, the level of documentation of that knowledge was noted to create a knowledge process map. Steps were also taken to make some processes more efficient. Important tacit knowledge was targeted for documentation either as standard operating procedure or through other knowledge management techniques.

This pilot effort highlighted why it was important to develop a special methodology for knowledge capture in utilities. One process that scored high on risk was flood conditions. At the time of the pilot program, the last flood that FCSA dealt with had occurred more than 20 years previously—too long ago for classic knowledge management techniques to label it as important. However, because of the high risks associated with flooding, the process was mapped during the pilot project. One month after the pilot exercise, Hurricane Isabel tore through northern Virginia. According to FCSA Director Wendy Jones (2004), having the utility response to flooding fully mapped was invaluable during the crisis. "My expectations were that we would gain a method to capture information gained through the experience of retiring employees. What we got was a method to capture employee knowledge gained through experience, criteria for prioritizing processes, and a way to drill down to find the critical areas of the processes to document." Jones cited other ben-

Stricter regulatory standards will force water supply and sanitation services to acquire more equipment and people in order to meet higher measures of environmental compliance.

efits of the knowledge capture process including:

- identification of problem areas, bottlenecks, and non-value-added work,
- increased understanding of critical tasks,
- an excellent training tool,
- a method to communicate with employees and obtain their feedback, and
- improvement of FCSA efficiency and effectiveness.

For FCSA, the knowledge capture process proved most beneficial in mapping operations that occurred infrequently; securing knowledge in processes and areas in which information and know-how were held by one individual; understanding what, how, and why others perform their work; and identifying the critical tasks of a process. Since the facilitated pilot program, FCSA has successfully continued conducting knowledge capture on its own.

SUMMARY

A joint study funded by AwwaRF and WERF confirmed that the water and wastewater utility sector will shortly face the loss of experienced workers (and their institutional knowledge) and may have difficulty hiring competent replacement personnel. One way that utilities can properly manage this transition is by implementing workforce planning. This process can aid in planning short- and long-term staffing needs, identifying the external and internal forces that influence an organization's strategic direction, and developing an action plan to ensure that the appropriate human resources are on board to meet anticipated changes. In addition, knowledge capture can play an important role in ensuring that operational and institutional know-how is not lost as employees retire or move to other industries.

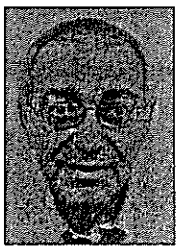
Challenges and opportunities go hand-in-hand. Although the coming generational change presents some daunting challenges, it also affords utilities an opportunity to become rightsized, efficient, effective organizations. Utility executives, line managers, and HR personnel must work together to effect this transition and provide the leadership that will enable their organizations to successfully navigate these developments.

Study included other components. The succession planning study analyzed demographic data to identify trends, surveyed recent retirees and utilities, developed and pilot-tested a workforce planning model designed specifically for water and wastewater utilities, and developed and pilot-tested a knowledge capture approach tailored to utilities. In addition, the study

- designed an approach to developing training programs, which was demonstrated at two utilities—one for water operators and one for wastewater operators;
- developed a knowledge management toolkit based on the "circle of knowledge" approach (Figure 2) to facilitate incorporation of knowledge management techniques into utility management and operation; and
- created additional modules addressing O&M skill sets, merit pay, strategies for becoming an "employer of choice," and other topics.

When published, the project report for the Succession Planning for a Vital Workforce in the Information Age study will provide a complete summary of study components and offer HR personnel and utility executives valuable strategies for managing the future brain drain.

ABOUT THE AUTHOR



Myron A. Olstein is a director in the Enterprise Management Solutions Group of Black & Veatch Corp., 18310 Montgomery Village Ave., Ste. 500, Gaithersburg, MD 20879; e-mail olsteinma@bv.com. A nationally recognized expert in the fields of benchmarking, strategic planning, and utility organizational issues, he has more than 40 years of professional experience, primarily as a consultant to water, wastewater, and solid waste utilities. Olstein is a member of AWWA's Conservation Division and of the joint AWWA/Water Environment Federation Benchmarking Clearinghouse Advisory Committee and was a project advisor on the AWWA Research Foundation study of the effects of conservation rates. He has a BA degree in applied science and BS degree in chemical engineering from Lehigh University in Bethlehem, Pa., and an MS degree in business administration from George Washington University in Washington, D.C.

If you have a comment about this article, please contact us at journal@awwa.org.

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