

## **BOARD OF WATER SUPPLY**

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Clifford P. Lum, Manager and Chief Engineer  
Donna F. K. Kiyosaki, Deputy Manager and Chief Engineer  
(as of June 30, 2006)

**POWERS, DUTIES AND FUNCTIONS.** The Board of Water Supply (BWS) manages Oahu’s municipal water resources and distribution system, providing residents with a reliable system and safe drinking water supply. As the stewards of Oahu’s most precious resource, the Board’s nearly 600 employees embrace this tremendous responsibility. The Board’s mission and vision “Water for Life – Ka Wai Ola” seeks to capture the essence and magnitude of that responsibility. This includes caring for Oahu’s watersheds, preserving and protecting the island’s finite water supply, and repairing and replacing the aging infrastructure.

The BWS is the largest municipal water utility in the state, serving one million customers on Oahu with 55 billion gallons of water every year. In order to keep the water flowing, BWS must carefully and proactively manage and invest in its intricate system consisting of 104 water sources, 164 storage tanks, and more than 2,000 miles of pipeline weaving through nearly every community on Oahu.

The BWS is a financially self-sufficient, semi-autonomous city agency. Its operations and projects are financed with revenues generated by water sales, and does not rely upon monies from the City or State.

A seven-member Board of Directors presides over and determines BWS policies. Five members are appointed by the Mayor and confirmed by the Honolulu City Council. The remaining two serve in their capacities as the Director of the State Department of Transportation and the Director and Chief Engineer of the City Department of Facility Maintenance.

The Board appoints the BWS Manager and Chief Engineer to run the Department. The Manager appoints the Deputy Manager. Together, they provide leadership and direction for the organization while supervising the Department’s day-to-day business activities.

**MISSION.** The mission of the Board of Water Supply is to improve the quality of life in the community by providing world-class water services. The Board’s mission statement, “Water for Life – Ka Wai Ola,” addresses the need to ensure customers continued access to safe and dependable water supplies now and into the future.

Three main strategic objectives emanate from this mission: resource, economic, and organizational sustainability.

- **Resource sustainability** ensures the protection of natural groundwater supplies and its efficient management.
- **Economic sustainability** calls for a diversity of financial resources to be employed to support system operating and capital needs, while keeping water rates affordable.
- **Organizational sustainability** calls for a sound, well structured, efficient organization with the tools and skills necessary to provide exceptional value to BWS customers, the community, and the watersheds.

**HIGHLIGHTS.** After 41 years of dedicated service to the Board of Water Supply, Manager and Chief Engineer Clifford S. Jamile bid the Department a fond farewell in July 2005. As Manager and Chief Engineer, Jamile led the BWS with new ideas and vision, taking bold steps to ensure that the future of BWS and Oahu's water resource would be protected and preserved for generations to come. Deputy Manager and Chief Engineer Donna F. K. Kiyosaki continued to lead the organization during the period of transition that followed. Then, in December 2005, the Board appointed Clifford P. Lum the Department's eighth Manager and Chief Engineer. Mr. Lum is responsible for providing the overall strategic direction and management of the BWS. Prior to this appointment, his 22-year career in civil engineering provided him with vast technical and management experience in both the public and private sectors. As President and Principal-in-Charge at The Limtiaco Consulting Group, Inc., Mr. Lum successfully managed the affairs of the multi-million dollar civil engineering and environmental consultancy.

March 2006 was one of the wettest months in local history after 43 consecutive days of heavy rains. The rainfall during this period helped to reduce water demand, allowing island water sources to continue their recovery after a record-breaking six years of drought. However, much of the heavy rain never made its way into the aquifers, instead the deluge created flood conditions in-land and flowed to the ocean through streams and as run-off.

After 11 years of deferring water rate increases, the Department determined that rate increases were needed to meet rising costs of delivering water to customers and to continue its proactive infrastructure repair and replacement programs. Despite a concerted effort to keep operational costs down, uncontrollable costs to run the Department continues to escalate – in 2006, BWS spent \$3.5 million for emergency road repaving (more than eleven times the repaving dollars expended in 1995); electricity rose by 34 percent from 1995 to 2005; and between 1996 and 2005, fuel costs for BWS vehicles escalated by 94 percent. Water rates will increase by 13 percent, approximately \$3 more on the monthly water bill for an average single-family residential customer, effective October 1, 2006.

In addition to rising operating costs, construction costs to improve our aging infrastructure also continued to escalate. The cost of ductile iron pipe increased by 18 percent and polyvinyl chloride (PVC) pipe increased by 29 percent between April 2005 and April 2006. The shortage and rising price of asphalt on Oahu had an immediate impact on the Department's construction project schedule and costs. Several water main projects near completion in the community, including Haleiwa and Kalihi, were delayed because contractors had to wait for availability of asphalt materials. This problem will likely continue to impact the BWS well into the next fiscal year.

Despite these challenges, water supply employees continued to concentrate their efforts and attention in support of the Department's mission, "Water for Life – Ka Wai Ola," with a focus on the following strategic objectives:

- **Resource sustainability**, which ensures that natural groundwater supplies are protected and managed efficiently, guided the following programs that were undertaken in fiscal year 2006 and which will continue for years to come:
  - The Board's aggressive and proactive water main replacement program and successful leak detection program have contributed to a decrease in the number of main breaks during the past year. There were 357 broken water mains repaired this year, 30 less than last year and 43 less than two years ago. Reducing the number of main breaks is an important measure to help reduce the amount of water lost within the BWS system.
  - Another program that aims to control preventable water loss, including from leaks and main breaks, gained momentum this year. Known as QUINCI (**Quality Infrastructure Conservation Initiative**), a team comprised of multi-divisional employees examines and analyzes evidence to pinpoint the causes of pipeline failure. Team members develop solutions to remedy potential problems in the design, installation, and/or maintenance of the waterline, and share their expertise and knowledge in a unified effort to reduce water loss and increase the longevity of the BWS water system.
  - The Department continues to look at alternative uses of water to more efficiently address water needs of the community. The Honouliuli Water Recycling Facility connected the Ewa Beach Golf Course and the Navy's Barbers Point Golf Course to the recycled water system, and the BWS continues to negotiate with community water users to provide recycled rather than potable water for irrigation purposes. Also, the BWS is still pursuing the use of cold seawater for building cooling as a water and energy conservation effort.
- The second strategic objective, **economic sustainability**, calls for diversity in the financial resources used to support the Department's operating and capital needs, while keeping water rates affordable. In support of this objective, the Department continues to pursue opportunities to expand its core business and to generate revenue through new initiatives:
  - It has always been the cornerstone of the BWS to provide the highest quality water at the lowest possible cost to island water users. Although uncontrollable operating expenses have risen steadily for the past 11 years, the BWS has consistently deferred raising water rates. In order to meet those higher operational costs and to sustain existing levels of service, it became evident that the Board must carefully examine the need for a water rate adjustment.

During this fiscal year, a system-wide rate review was completed that included a comprehensive assessment of BWS system conditions and needs, operating costs, and financial performance. The conclusion was that the BWS must raise rates to continue providing customers with high quality services and reinvesting in an aging infrastructure.

- A new Computerized Maintenance Management System (CMMS) was implemented in June 2006. The Department's Information Technology (IT) personnel spearheaded the design and development of the CMMS, which will replace the labor-intensive work order system and

allow greater efficiency by tracking work and cost data electronically. Field Operations Division crews at Manana Corporation Yard have started to use this system.

- The Board's third objective, **organizational sustainability**, calls for a sound, well-structured, efficient organization with the tools and skills necessary to provide exceptional value to customers, the community, and watersheds. These programs and events characterize ongoing efforts during this fiscal year:
  - Career pathing is the process that identifies specific career goals within the BWS, and the sequential steps in education and skills-and-experience-building that are needed to attain those goals. Human Resources personnel researched and developed a Career Pathways pilot program to help employees achieve their career goals, and to develop their leadership skills, reaffirming the BWS's principle that "people are the Department's greatest asset." Groundskeepers from the Field Operations Division were the first to participate in the program this year.
  - IT personnel began moving the existing Customer Accounting System (CAS) software to a modern platform and environment, which will allow the Department to realize greater efficiency and effectiveness in its business and core operations.
  - Computer Programmer V Gary Tomita and Water Plant Maintenance Repair Supervisor II Herbert Wong were named BWS Employees of the Year for 2005, and represented the Board in the annual City Employee of the Year competition in late 2005.



**2005 BWS EMPLOYEES OF THE YEAR.** Gary Tomita, left, and Herbert Wong, right, were honored for their excellent work and years of service to the Department.

Both are excellent examples of the caliber of the BWS workforce. Mr. Tomita's involvement with developing and implementing several time- and money-saving computer programs has greatly enhanced the BWS's efforts to build itself into a dynamic 21<sup>st</sup> Century utility. Mr. Wong's perseverance, competence, and expertise has greatly contributed to the success of the Water System Operations-Plant Branch in carrying out its responsibility to maintain the water system equipment and provide a continuous flow of water to Oahu residents.

- BWS employees proudly represented the Aloha State in the 2006 pipe tapping competition held in mid-June at the annual American Water Works Association (AWWA) national conference in San Antonio, Texas. The contestants must open a live cement-lined, ductile-iron pipe, and install a water service tap in the fastest time. Women's teams began competing in Hawaii in 2001. A BWS women's team has participated in the nationals since 2002.

The men's team – comprised of Andrew Freitas, Aaron Asato, Glen Ah Yat, and coach Jensen Mimuro – finished fourth in the men's contest with a time of 1 minute, 23.56 seconds (1:23.56). The women's team came in second in the women's contest with a 2:05.93 time. Danielle Ornellas, Anna Tanaka, Carolyn Sawai, and coach Gary Fernandez are the team members.



**SHAKA DOES IT.** The men and women representing the Hawaii Section of the American Water Works Association placed fourth and second, respectively, in their competitions in San Antonio. L–R, standing, BWS Manager Clifford Lum, Andrew Freitas, Aaron Asato, men's coach Jensen Mimuro, Danielle Ornellas, women's coach Gary Fernandez, and Glen Ah Yat. Kneeling, Anna Tanaka and Carolyn Sawai.

- Service....Loyalty....Affection for the people of Hawaii....These are characteristics that the recipient of the William Y. Thompson Award must possess. The award is given each year to a water utility employee in the State of Hawaii who has provided outstanding and dedicated service to the community and the water industry. Thelma Kimura, a 21-year BWS employee, currently customer service and records supervisor with the BWS Customer Care Division, was presented with the annual Hawaii Water Works Association award in October 2005 for excellence in service and work ethic, sharing the honor with an employee from the Hawaii Department of Water Supply.



**2005 WILLIAM Y. THOMPSON AWARD.** The Hawaii Water Works Association honored Thelma Kimura for her excellence in service and work ethic. Also pictured is Customer Care Division chief Keith Shida.

**DIVISIONAL AND STAFF OFFICE HIGHLIGHTS.** The Department's 13 support offices and divisions are tasked with implementing the BWS's mission and vision by effectively managing Oahu's groundwater sources and distribution system to ensure a sustainable resource that meets current water demands and future customers' needs. These are highlights of divisional and support office activities for the past year that illustrate how the Board of Water Supply continues to work towards improving the way it conduct business – to operate more efficiently, and to respond to customer and community needs and concerns quickly and innovatively.

**CAPITAL PROJECTS DIVISION.** The Capital Projects Division ensures that all improvements to Oahu's municipal water system are designed and constructed in accordance with the BWS Water System Standards.

Engineering personnel managed water system improvement projects programmed by the Department. Staff engineers reviewed plans and specifications for projects designed for the BWS by consultants, and also prepared plans and specifications for water main replacements and facility repair and renovation projects. Construction inspectors oversaw the construction of BWS projects as well as Federal, State and private projects to verify that the improvements are constructed in accordance with approved plans and specifications.

The Capital Projects Division implements the Department's Capital Program, including the design and construction of new source, storage, treatment, transmission, and distribution facilities and the repair, maintenance, and upgrade of aging water mains and facilities. A total of \$80 million in construction contracts and \$4.5 million in consultant contracts were awarded as of June 30, 2006. The programs include:

- **Water Main Replacement Programs.** Aging and corroding water mains are systematically replaced throughout the municipal water system to improve system reliability, reduce main breaks, and to insure sufficient pressure during periods of peak demand. Fire hydrants are also

installed to improve fire protection to meet current standards. Part II of a multi-phased project along Farrington Highway in Waianae was completed during the past fiscal year with three remaining phases under construction or planned for construction. The BWS spent more than \$22.5 million on transmission main projects on Oahu, including work in Aiea, Halawa, Moanalua, Manoa, and Palolo. More than \$55.4 million was awarded for new water main installation projects around the island, including Ala Moana, Punahou, Liliha, Kaneohe, Haleiwa, Wahiawa, and Pearl City.

- **Water Facility Improvements.** Capital Projects continued to identify and improve the integrity of aging BWS water facilities. Such facilities include water reservoirs, well and booster stations, and administrative offices belonging to the Department. Among the improvement work that was completed this fiscal year included the repair and/or renovation of stations in St. Louis, Hawaii Kai, Kahaluu, Waimalu, and Waiiau. Residents in Hawaii Loa, Wilhelmina Rise, Woodlawn, Aiea, and Makaha will see work beginning in their communities during the next fiscal year.
- **Renovation Projects.** Renovation projects ensure the dependable service and operational efficiency of the Department's pump and booster stations throughout the system. This year, construction contracts were awarded for the renovation of the mechanical and/or electrical systems for facilities in Hawaii Kai, Wilhelmina Rise, Kalihi, Halawa, Windward Oahu, Pearl City, Makakilo, Waipio, and Waianae. Renovation projects were completed for stations in Waipio, Pearl City, Waihee, and Waialae Iki.
- **Recycled Water Main Projects.** The installation of a 16-inch recycled water main for the Villages of Kapolei was completed during this fiscal year. The new pipeline is part of the BWS's promotion of recycled water as an alternative water source for irrigation purposes and upgrades the recycled water infrastructure in this area. Also, a new construction contract was awarded to install a 16-inch recycled water main along Geiger Road, which will strengthen the recycled water system serving the golf courses on the Ewa plains.

COMMUNICATIONS OFFICE. The Communications Office continues to play an important role in helping the Department achieve its long- and short-term goals. The Office provides comprehensive strategic communications services and support to the Department, including internal communication with employees and the Board of Directors; external communication with key stakeholder groups such as customers, community/advocacy groups, neighborhood boards, business/community leaders, media, and elected officials.

This Office also continued to play a major role in promoting and educating island residents on the importance of resource sustainability by encouraging conscientious water use.

Among the key activities and projects administered and coordinated by Communications staff:

- **Public education programs.** A variety of activities supported and reinforced the Office's efforts to educate customers about BWS and its programs while continuing to stress the importance of conserving water all year long.
  - This Office spearheaded a comprehensive public communication and outreach effort to educate and prepare customers for the anticipated water rate increase. The program



- included targeted communications aimed at key stakeholder groups, namely, customers, neighborhood boards, employees, and the media. The Office developed presentations, printed materials, press materials, and correspondence; and coordinated meetings with stakeholders.
- The award-winning Water Conservation Media Campaign, consisting of television and radio public service announcements (PSAs) and bus cards all urged consumers to follow the Department's "7 Easy Ways to Save Water," tips to help customers understand the limits of the water supply and encouraging them to take simple steps to do their part.
  - Hundreds of island residents enjoyed the Halawa Xeriscape Garden open house and plant sale. The annual event is an effort to educate customers about xeriscaping, a creative and beautiful way to conserve water through the landscape. An estimated 50 percent of water consumption in the average single-family home is used outdoors. Xeriscaping offers an ideal way to save 30 to 80 percent in water consumption and includes growing beautiful plants other than cacti, often thought of as the only kind of drought-tolerant plants available.
  - The BWS urges its customers to check for and fix property leaks regularly. Once a year, during Detect-A-Leak Week, this message is reinforced through the public education and outreach program. The program encourages leak detection and repair while educating consumers on the important role they play as stewards of the precious water supply.
  - The BWS continued to urge its customers to view water conservation as a way of life. Its Water Conservation Week observance is an opportunity for the Department to share this important conservation message with island keiki and to encourage and teach environmental responsibility at an early age. Nearly 2,600 Oahu kindergarten through grade 6 students participated in the annual BWS poster contest depicting water



**LEARNING ABOUT THE WATER SUPPLY.** Residents took advantage of a Halawa Xeriscape Garden tour to learn about Oahu's water supply and water-conserving landscaping techniques and plants.



conservation themes and messages. The winning entries were shared with the community at Lane Gallery in Honolulu City Hall and at Pearlridge Center during April and May 2006. They are also featured in the BWS Water Conservation Calendar, which is distributed to the general public.

- The tour program also shares the Department's conservation message with Oahu's youth and the general public, reaching out to the community throughout the year. More than 3,600 school children, teachers, residents, and island visitors were welcomed to the Fred Ohrt Museum (Kalihi Pump Station), the Halawa Xeriscape Garden, the Waihee Tunnel, and the Nuuanu watershed to learn about the water resource and BWS's efforts to provide a safe and reliable drinking water supply, and most importantly, the role that people play in the conservation and protection of this precious resource.

Thousands more were reached through presentations at schools and other public venues. Throughout the year, the Department participated in a variety of events in the community, including Waianae Sunset on the Beach, Waiialua/Haleiwa Community Fair, State of Hawaii's Children & Youth Day, the BIA Home Building and Remodeling Show, and several Family Sundays at the Bishop Museum.

- Community outreach program. The Office continues to proactively reach out to the community that the BWS serves.
  - Its community outreach program ensures that residents and businesses are informed of waterline repair and replacement projects that may impact their community. Staff continues to work closely with BWS engineers to ensure that communities are aware of and understand the importance of the Department's efforts to provide a safe and reliable drinking water supply to Oahu residents.
  - As an organization responsible for thousands of miles of underground pipeline, the BWS's Cultural Consulting program continues to be both essential and useful. The program ensures the Department is able to respond appropriately to the discovery of iwi kupuna, or Hawaiian ancestral remains, during construction projects. Staff, working closely with State and cultural groups anticipate and investigate possible burial sites but most importantly open the lines of communication with these key stakeholder groups so that issues can be quickly and amicably resolved. This approach provides the BWS an opportunity to avoid and mitigate potential problems, which can result in project delays and additional costs. This proactive rather than reactive approach has been critical to the success of numerous BWS projects over the past year.
- Employee communications program. The Office continues to play a key role in fostering a work environment that encourages open communication and collaborative problem solving – key components to building an efficient and healthy workforce.
  - The Communications Office coordinates regular and consistent employee quarterly and annual meetings. These meetings involve the Manager and provide a forum for open discussion on issues impacting the organization and its employees.

- With feedback from employees, this office revamped the BWS Intranet, the Department's internal employee access website, to better meet the needs of employees. Regular and consistent information and news updates are posted multiple times a week. The site also serves as a central information hub for employees.

CUSTOMER CARE DIVISION. With more than 168,000 active services in the BWS system, the Customer Care Division, as its name suggests, ensures BWS customers have a positive experience with the Department and are well cared for. This includes providing the highest level of customer service to the walk-in or calling customer. Customer Care promptly and efficiently assists customers with bill payments; delinquent bills; account inquiries, set-up, and closing; water service investigations; building permits; new water services; and meter reading. Customer Care personnel successfully handled more than 100,000 calls during the past fiscal year from customers, covering a variety of issues from billing inquiries to reports of water outages.

Providing Oahu water users with safe, high quality drinking water is the Department's primary concern. The Cross Connection Section of the Customer Care Division is entrusted with protecting the public drinking water system from "backflow."

Backflow occurs when water in a customer's property pipes is sucked back into the BWS system, possibly when a main breaks, or in high-rise buildings if water pressure is greater in the customer's pipes and water is pushed back into the BWS waterline. If a customer has left a water hose in a filled tub or sink or attached to garden spray containers, the water in the property pipe can be drawn back into the BWS waterline. This type of possible contamination could affect more than 3,600 private and government-customers. To prevent these situations, the Cross Connection Section oversees numerous programs to ensure the quality and safety of the community drinking water supply.

Customer Care investigators follow-up on high water bill calls, verification of leaks, and locate and mark underground waterlines for roadwork and emergency situations. A new State law, known as the "Call Before You Dig" law, went into effect on January 1, 2006, and establishes a one-stop call center for residents and businesses involved in construction affecting public roads. Customers are required to contact the call center prior to any excavation work, and are provided with location information about existing underground utility lines for water, sewer, electricity, cable, gas, and telecommunications.

BWS investigators were already conducting toning, or locating underground waterlines, before the law went into effect, however, they have seen more than a 100 percent increase in the number of requests for toning since the law's enactment. The law should help to reduce the number of accidental main breaks caused by contractors unaware of pipelines in a work area, preventing the problems that can be caused by main breaks – lost water service, traffic tie-ups, and other inconveniences.

FIELD OPERATIONS DIVISION. The Field Operations Division is responsible for ensuring uninterrupted water flow to the Department's customers, including line leak repairs; installing, replacing, and enlarging water service lines; maintaining fire hydrants, waterline valves, and BWS grounds and buildings; and 24-hour response to trouble calls and requests for leak investigation and closing and opening customers' water service.

Overall, there were 357 main breaks in FY 2006. This represented a decrease in the number of main breaks this year from last year, and is well under the 400-plus average of main breaks experienced in the 1990s. There are many factors that contribute to this decrease, including more efficient field operations.



**SHORT TRENCHWORK.** Not all water mains are located deep beneath the street. The trench dug to expose the broken water main on Notley Street in Kalihi was about six feet deep.

Field crews are responsible for responding 24 hours a day, seven days a week to water emergencies. From traffic impacts to loss in water service, main breaks have a tremendous impact on the public. To their credit, field operations employees were consistently commended for their efforts to quickly and, often under difficult conditions, repair and restore water service to customers in a timely manner. In addition to working on the pipeline repairs, BWS crews provide affected customers with water by stationing water wagons in the neighborhood, bypassing water by using alternate waterlines in the area, and/or installing a tap on a fire hydrant during repairs. Because BWS pipelines are typically under roadways, BWS crews must also clear the area of debris and repair the broken roadway to allow normal traffic to resume.

**FINANCE DIVISION.** The Finance Division provides support for all of the Board of Water Supply's financial and fiscal functions, including general accounting, payroll, accounts payable, planning and analysis, inventory, fixed assets, treasury, and purchasing.

Finance personnel were actively involved in a comprehensive study of the Department's costs associated with providing water service. The study indicated that the BWS could no longer afford to defer scheduled rate increases as it had done since 1995. The increase will be spread over a multi-year rate schedule to reduce the impact on BWS customers.

Finance was also involved in the issuance of more than \$165 million principal amount of Board of Water Supply Water System Revenue Bonds, Series 2006A; and \$48.6 million principal amount of Board of Water Supply Water System Revenue Bonds, Series 2006B (AMT, or Alternative Minimum Tax). The proceeds from the Series 2006A and 2006B bonds will be used: 1) to pay the costs of various capital improvements to the water system; 2) to advance refund a portion of the outstanding Water System Revenue Bonds, Series 2001 and Series 2004; 3) to refund all of the outstanding Water System

Revenue Bonds, Series 2002A and Series 2002B; 4) to fund the Common Reserve Account; and 5) to pay the costs of issuance of the Series 2006A and Series 2006B bonds.

The Series 2006A bonds were sold on June 6, 2006, at a true interest cost of 4.614431 percent, while the Series 2006B bonds were sold on June 21, 2006, with a true interest cost of 4.708133 percent. Net present value savings of \$2.1 million were realized on the partial refunding of the Series 2001 and Series 2004 bonds. The Series 2002A and 2002B variable rate bonds were converted to fixed rate bonds to take advantage of historically low fixed rates.

The bonds were issued at a total premium of more than \$4 million. Net proceeds of \$112.5 million were deposited to the Board's accounts on July 7, 2006.

**HUMAN RESOURCES OFFICE (HRO).** The HRO administers and manages the human resources program, including training and development, labor relations, classification and compensation, benefits administration, and contract negotiations pursuant to §76-3.6, HRS, for the Department's 547 regular, full-time employees.

HRO coordinated classroom instruction for Field and Water System Operations employees in preparation for the two examinations for State of Hawaii Department of Health Distribution System Operators certification that were conducted this past fiscal year. The examination was taken by 139 employees. An average 66 percent of employees passed the exam for the various levels of certification.



**CONTINUED PROFESSIONAL DEVELOPMENT.** Personnel from BWS Field and Water System Operations Divisions took instruction for their Distribution System Operators Certificates.

HRO implemented the pilot Career Pathways Program, designed to provide guidance to employees so that individual and organizational career goals can be met. HR staff conducted workshops for 31 employees; 15 who opted to continue with the program, including one-on-one counseling sessions, individual development plans, and engaging in follow-up sessions with staff.

Training classes, workshops, conferences, seminars, and career development events in job-related skills and supervisory management, retirement and financial planning, drug abuse, workplace violence, and

sexual harassment awareness prevention, are coordinated by the HRO and are well attended by employees and management.

HRO also coordinated the Department's Employees of the Year Recognition program and Service Awards. Gary Tomita of Information Technology, and Herbert Wong of Water System Operations were named as BWS Employees of the Year for 2005. Four employees received 35-year service awards and 20 employees received 25-year service awards during the fiscal year. A total of 139 employees had acquired 25 or more years of government service by the end of the year.

During FY 2006, the BWS averaged 550 regular, full-time employees; 24 new employees were hired, while 12 retired.

INFORMATION TECHNOLOGY DIVISION (IT). The IT Division provides complete computer, telephone, and network related services to BWS employees, and plays an integral role in improving the efficiency and management of the Department's administrative and operational endeavors.



**CMMS ROLL-OUT.** IT personnel introduced Manana pipefitters to a new maintenance management system that will be more efficient in handling job staffing and scheduling, job and labor costs, and tracking of parts and materials used in preventive and corrective maintenance of the BWS water system.

As part of the plan to better automate and manage all BWS fieldwork, the IT Division rolled out its new CMMS to Field Operations Division crews at Manana Corporation Yard in June. This new state-of-the-art system will handle all preventive and corrective maintenance, job scheduling, job costing, asset tracking, parts and materials, and labor costs. Field crews will have integrated electronic mapping capability (GIS, or Geographic Information System) to aid them in decision-making while in the field. IT anticipates rolling the system out to the other four field corporation yards through the remainder of this and next calendar years, and will continue to improve the system in support of all BWS field personnel.

IT personnel also began moving the Department's Customer Accounting System (CAS) software to a modern platform and environment during this fiscal year. CAS is written and maintained in an obsolete computer language, running on old equipment that can no longer be replaced easily if it fails.

Upgrading and moving the CAS software to a modern operating system will allow it to integrate seamlessly with all other business systems at the BWS.

LEGAL COUNSEL OFFICE. The Legal Counsel Office continues to provide legal counsel and advice to the Board of Water Supply and its officers and employees; and to ensure compliance with federal, state and local laws, the recognition of best practices, and the limitation of exposures and liabilities of the Department.

Legal Counsel also administers and oversees the Office of Risk Management, which assesses the BWS's risk exposure, determines the appropriate risk-financing program, and manages claims filed against the Department.

The Driver Improvement Coordinator continued to train employees in the safe operation of vehicles and equipment, with an emphasis on the driver improvement program. Random tests for drugs and alcohol were performed as part of the Drug and Alcohol Program, and in conformance with federal Commercial Drivers License requirements.

The Safety Manager has been developing and compiling a comprehensive Occupational Safety and Health Manual for the Department, where all policies and directives involving the health and safety of employees would be properly addressed and/or updated. Nearing completion, subjects such as confined spaces, fire prevention, handling of hazardous materials, accidents, and emergency procedures would be covered.

His focus on the establishment of a health and safety program for the Department ensures that the BWS is in compliance with the requirements of the Hawaii Occupational Health and Safety laws and other similar State and Federal laws. His work covers maintaining all necessary safety records, investigating accidents, conducting unannounced site visits, conducting hazard evaluations, and reviewing all accident or injury reports. He also conducts regular and specialized training classes in specific work safety skills that BWS employees need in the performance of their job assignments. These classes include fall protection and excavation/trench job training.

In August 2005, the Safety Manager completed his inspection of all BWS offices and buildings for hazardous conditions and safety concerns that exist in the workplace. His inspection efforts made employees more aware of safety hazards in their workplaces, and included informal training of office supervisors to make them more aware of problems and conditions so that remedial action can be taken quickly. These efforts ensure a safe and productive workplace.

SECURITY OFFICE. During the past fiscal year, the Security Office continued to implement priority initiatives and review plans and policies to improve the protection of our physical infrastructure, the safety of our employees, and the response to terrorist incidents and other emergencies.

Emphasis was directed at teaming BWS divisions with the Honolulu Police and Fire Departments, and the City and State Civil Defense to frame prompt and effective responses critical to protecting the water supply in times of crisis.





**KEEPING THE WATER SAFE.** BWS employees joined with members of the Honolulu Police and Fire Departments, and Civil Defense in an emergency preparedness exercise.

The Security Office also improved its communication network to support personnel in a major emergency, including the ability to coordinate the flow of voice, image, and electronic information to responding agencies.

**STRATEGIC DEVELOPMENT DIVISION.** Comprised of two vital arenas of the Board of Water Supply – the Business Development Branch and the Water Resources Branch – the efforts of both branches ensure that key business initiatives and projects, and critical resource planning are properly managed and administered.

The Business Development Branch researches and pursues opportunities to expand and market the Department’s water utility business.

In fiscal year 2006, the Board of Water Supply continued to refine and submit proposals to own and operate military water systems on Oahu, part of a strategic initiative to expand the BWS services area. The Department responded directly to Department of Defense initiatives to privatize military water and wastewater systems nationwide, and continued discussions with the Army to assume the ownership and operations of Army water systems on Oahu.

Use of recycled water as an alternate and more efficient source of water for irrigation and industrial purposes continues to be pursued by Business Development staff. They added two new users to the Department’s recycled water system, connecting the Ewa Beach Golf Course and the Navy’s Barbers Point Golf Course to the system. They also signed a service agreement with the new Ocean Pointe Golf Course to furnish recycled water for irrigation purposes. These new users will use an estimated 2.0 million gallons of recycled water for golf course irrigation.

The Water Resources Branch directs the BWS’s long-range water resource and capital planning for the island’s water system and ensures that there is an adequate water supply for current and future customers. Water Resources personnel keeps to the “Water for Life” principle, looking to a variety of ideas and concepts in conservation, potable groundwater, and alternate supplies of water, including recycled water, to meet those demands.

Their efforts also focus on protecting the natural environment and water sources by monitoring Oahu's rainfall and aquifer water levels and salinity, taking appropriate precautions and action to ensure the current and future use of the Department's major pumping stations, and safeguarding prime watersheds.

Water Resources staff have nearly completed the Waianae and Koolauloa watershed management plans, which are the regional, long-range strategic water plans for the City and County of Honolulu. They follow the community land use plans adopted by the City as a guide for water resource management. The watershed management plans also provide the strategic planning framework for the long-range capital program, ensuring that the infrastructure will meet all future water demands.

In September 2005, the cold seawater air conditioning system, developed by the BWS, was brought on-line at the University of Hawaii's John A. Burns School of Medicine facility in Kakaako. The use of cold seawater for building cooling is a water and energy conservation program that also supports the Department's initiatives for economic sustainability.

**WATER SYSTEM OPERATIONS DIVISION.** The Water System Operations Division includes the Plant, Water Quality, Automotive, and Mechanical/Electrical Engineering Branches.

The Plant Operations Branch continues to monitor and operate the Department's diverse water systems, pumping approximately 150 million gallons of water daily to meet the community's demands. The BWS water system operates 24 hours a day, seven days a week, and is monitored by the Branch's Control Center staff using the Supervisory Control and Data Acquisition (SCADA) system.

Plant Operations Branch personnel ensure that reservoirs are filled to meet peak water use demands, and that water is moving smoothly through pumping and booster stations and pipelines to homes and businesses throughout the island. They also ensure that the Department is able to deliver safe, high quality water to its customers by maintaining various water treatment facilities including chlorination systems and granular activated carbon (GAC) plants.



**WATCHFUL EYE.** The Control Center staff monitored the BWS water system around-the-clock through the Supervisory Control and Data Acquisition (SCADA) system.

The Water Quality Branch ensures that the Department's water supplies are in compliance with all Federal and State safe drinking water regulations. The microbiologists and chemists in this Branch are serious about keeping the community's water supply safe to drink; and monitor changes in safe drinking

water regulations, review and comment on new and replacement water treatment and system projects, and oversee special water quality studies and research projects.

While Water Quality personnel respond to and investigate water quality complaints from customers, they are focused on collecting and analyzing water samples from the BWS's water sources; distribution system, including well stations and reservoirs; and water treatment facilities. More than 3,100 samples, requiring 11,139 tests, were analyzed by BWS chemists during the fiscal year. BWS microbiologists examined more than 9,000 water samples for coliform bacteria and in response to water quality complaints and investigations. The Microbiology Laboratory maintains its State Department of Health and Federal Environmental Protection Agency certification.