

HISTORY OF THE LONG BEACH WATER DEPARTMENT 2000-2011











ith the excitement and anticipation of a new millennium, the Long Beach Water Department (LBWD) made it through Y2K (and all of its hype) and into the 21st Century. Staff had worked diligently to ensure

that core water and sewer services would continue to be reliably provided throughout the city and that the transition to the year 2000 would be a smooth one for the Department and its customers.

The City of Long Beach had recently approved the location of a new Emergency Operations Center (EOC).



The new Emergency Operations Center (EOC) located next to the Groundwater Treatment Plant

The EOC would serve as the city's updated communications

and planning headquarters should a natural disaster or terrorist activity hinder the ability of city departments to operate out of their regular locations. The chosen site was adjacent to the Groundwater Treatment Facility, which meant that new security procedures would have to be considered by the Water Department.

In June 2001, following the retirement of Robert Cole, the Department welcomed a new General Manager to the organization. Kevin L. Wattier, a professional engineer and water industry professional with many years of experience, took over the reins of leading the Water Department into the 21st Century. Mr. Wattier had worked for 13 years in a variety of positions for the Metropolitan Water District of Southern California and was a well-known figure in the world of California water. Mr. Wattier would serve as the organization's General Manager for well over a decade and would become the second longest serving General Manager after Brennan S. Thomas.

On the 11th day in September of 2001, the United States would experience one of the worst terrorist acts in its history. Initial details of the incident were unclear, but as the morning unfolded, most of the shocked nation could only watch as additional reports filtered in about planes crashing into the Twin Towers of the World Trade Center in New York City and the Pentagon in Washington D.C.

As several of its facilities were vulnerable to a potential terrorist attack, the Water Department put its employees on high alert and immediately instituted a lockdown of all of its properties. The Department had always ensured a safe water supply for its customers, but as a result of the terrible events that had occurred on 9/11, stricter security policies and procedures were permanently instituted at all Department facilities.

During the year, the Department continued to launch a number of new and important programs. Since taking over responsibility for the city's sanitary sewer system in 1988, the Department had made considerable progress in

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addressing the substantial challenges posed by an aging infrastructure, much of which was 60 to 80 years old. The

State-of-the-art video equipment utilized by **Sewer Division staff**

costly sewer system overflows.

unemployment levels nationwide.

first Citywide Sewer Master Plan, developed by the Department and Boyle Engineering in 1991-92, provided a prioritization of the

sewer system's deficiencies that would need to continue to be addressed in the coming years. The Department also implemented a new Grease Trap Inspection Program for

restaurants and businesses, aimed at preventing

Discovering that Mars once held water was a major scientific discovery in 2002. Several photographic images showed craters that at one time were filled with water. Unfortunately, this discovery would be overshadowed by a financial catastrophe that would come to be known as "ENRON." The Enron scandal rocked the financial, energy and government industries and devastated the lives of countless Americans. The scandal was one staff to pinpoint problems of many things that led to an unstable economy, fluctuations in the stock market and varying excavations



Robotic technology allows without expensive street

In 2002, Long Beach residents voted to make revisions to the Long Beach City Charter that would change how the Department operated. That year, Proposition LB-T was brought before voters to amend the Charter by

transferring authority over most employment and personnel matters in the City's Water Department from the Board of Water Commissioners to the Department's General Manager. Voters would ultimately pass the measure, freeing the Board from having to deal with day-to-day matters, and allowing Commissioners to focus on their core duties of establishing department-wide policies and strategies, as well as approving the Department's annual water & sewer fund budgets and rates.

It was around this time that the Department began researching the feasibility of acquiring a patent for the Department's unique seawater desalination process known as "The Long Beach Method." The Board, along with the General Manager, the City Attorney's office, and Diem X. Vuong, former Assistant General Manager, worked diligently to apply for the patent. At the same time, the Board entered into an agreement with the Los Angeles Department of Water and Power (LADWP) to construct and



Schematic of the Long Beach **Seawater Desalination Facility**

operate a Seawater Desalination Research and Development Facility on LADWP's Haynes Power Generation property in East Long Beach.

In 1996, the Department had built a seawater desalination pilot project with the help of federal funding. The goal now was to construct a research and development facility capable of treating approximately 300,000 gallons of seawater per day (GPD). To defray some of the costs of constructing such a facility, the Department lobbied for \$1 million in federal funding from the Energy and Water Appropriations Bill, which was sponsored by Representatives Steve Horn and Juanita Millender-McDonald and Senator Dianne Feinstein. Additional appropriations funds would be received in the coming years, bringing total federal funding for the project to several million dollars by the year 2011.

Over the years, the pilot project and research and development facilities welcomed a diverse array of visitors. In addition to many federal, state and local representatives, one of the more unique visitors to the

Water Department's facilities included King Taufa'ahau Tupou IV, of Tonga, who made the long trek to Long Beach in January 2004, in order to learn about the 9,000 GPD Seawater Desalination Research Pilot Project. The King and his countrymen enjoyed their visit and were left with a good impression of the Department and its seawater desalination program.

California's population was growing rapidly, but the statewide water storage and delivery system had not been the seawater desalination pilot project site



King Taufa'ahau Tupou IV, of Tonga, visits

significantly improved in 30 years. Statewide water supply reserves had fallen to dangerously low levels and it was uncertain whether the public's demand for water during a major disruption to the state's water delivery system could be met. In 2003, Governor Gray Davis was recalled, which led to Hollywood Icon Arnold Schwarzenegger being elected as the new Governor of California. Schwarzenegger entered office at a time when the California economy was on shaky ground and people were generally unhappy with the direction that the state was heading toward.

By the end of 2003, construction on the Department's 300,000 GPD Seawater Desalination Research and Development facility was complete. A dedication ceremony was held to commemorate the event with speakers that included United States Bureau of Reclamation Commissioner John Keys,

An inside look at....Leadership Long Beach Board of Water Commissioners

The Long Beach Board of Water Commissioners was formed in 1931. Since that time, 59 residents have served on the Board. The following people served on the Board during the 2000-2011 time frame.



CHARLES H. PARKS, 1993-2003



HELEN Z. HANSEN, 1996-2007



BENNETT A. LONG, 1996-2005



STEPHEN T. CONLEY, 1997-2008



RICHARD S. WILLIAMS, 1999-2003



C.J. WALTER, 2003-2005



FRANK CLARKE, 2003-



LILLIAN KAWASAKI, 2005-2007



WILLIAM B. TOWNSEND, 2005-2012



JOHN D.S. ALLEN, 2007 -



PAUL C. BLANCO, 2007 -



SUZANNE DALLMAN, 2008-

*Harry Saltzgaver was apppointed to the Board of Water Commissioners in 2012 at the time of this publication. Man

Congressional representatives Juanita Millender-McDonald and Dana Rohrabacher, Long Beach Mayor Beverly O'Neill, and other dignitaries.

In 2005, a Fats, Oils, and Grease (FOG) Education and Outreach Program was established as the result of a new citywide ordinance. The goal of the program was to reduce the number of citywide sanitary sewer overflows (SSOs) that occur due to FOG buildup in the sewer system. To support the FOG program, a team of



Dedication Ceremony for the Seawater Desalination Research and Development Facility

highly qualified staff members was assembled to work with and educate local restaurants on the importance of

Staff members meet with local restaurants to review the FOG Program responsibilities and requirements

preventing the illegal disposal of FOG into the city's sanitary sewer system. Restaurants would be required to install grease traps and/or interceptors and Water Department employees would perform periodic audits to ensure that restaurants were in compliance with the new ordinance. Whenever a new restaurant opened or an existing restaurant transferred ownership, Department employees would meet with the facility manager to discuss the FOG program and its various requirements. Because of the work and effort invested in programs such as this one, the number of "Category 1" sewer overflows decreased considerably between 2001 and 2011. Category 1 overflows are those that exceed 1,000 gallons and/or that reach a surface body of water, such as a river, bay or ocean.

The FOG program has proven to be a great success thus far, with positive working relationships being formed between the Department and many Long Beach restaurants.

This was also the first year that the Department hosted a quarterly beach clean-up event. The site that was chosen was along Bluff Park beach, and is adjacent to the location where the Department's Under Ocean Floor Seawater Intake and Discharge Demonstration Facility would eventually be constructed. The Department's beach cleanup events are well attended and are held on a quarterly basis. They provide the Department with a great opportunity



The results of a successful beach clean up event

to engage its customers and give back to the community.

In order to further increase the reliability of the city's water supply, LBWD developed and constructed the first of two conjunctive use projects in 2005. The Long Beach Conjunctive Use project was an innovative and environmentally responsive water storage strategy that allows Long Beach to maximize the use of the groundwater basin that runs beneath the City of Long Beach, strengthening the City's water supply reliability while maintaining water rate affordability. The \$4.5 million dollar project was constructed in partnership with the Metropolitan Water District of Southern California (MWD), the Water Replenishment District of Southern California (WRD), and the California Department of Water Resources (DWR). The project was funded entirely through Proposition 13 bond funds. The project enhances the



Representatives from Long Beach, Lakewood and MWD are pictured together at the ground breaking ceremony for the Long Beach/Lakewood Conjunctive Use Project

Department's groundwater production capabilities and improves the performance of the saltwater barrier, keeping harmful ocean water from intruding into the groundwater basin and mixing with potable water supplies.

Soon after, a second groundwater storage project was developed in a partnership between LBWD, the City of Lakewood and MWD. The Long Beach/Lakewood Conjunctive Use Project was a groundbreaking effort to further strengthen the region's water supply reliability. The project allowed the Department to

utilize excess storage capacity in the Central Groundwater Basin to store up to 3,600 acre-feet of imported water during normal to wet hydrologic years. As part of this project, an Aquifer Storage and Recovery (ASR) well was constructed in the City of Lakewood and linked to Long Beach's water distribution system. ASR wells have the ability to both inject and extract water depending on the conditions and need. This allowed the Department to increase water storage during wet years and extract water when additional supplies were needed.

In 2006, with unemployment at historically low levels, it appeared the economy was booming. Home sales and home prices were skyrocketing, making it appear that the country would be in good fiscal shape for years to come. Unfortunately, the housing bubble burst soon thereafter, which would have a negative economic impact on the country. In 2007, the unemployment rate was still low but the economy was beginning to show obvious signs of decline and was considered by many economists to be well on its

way toward becoming the worst financial crisis since the Great Depression of the 1930s. The recession resulted in the collapse of large financial institutions, the bailout of banks by the national government and large downturns in stock markets around the world. In many areas, the housing market also suffered, resulting in numerous evictions, foreclosures and prolonged unemployment. It contributed to the failure of key businesses and declines in consumer wealth estimated to be in the trillions of dollars.

Coinciding with the economic slump was a dramatic erosion in the reliability of the California water supply. In August 2007, a federal court imposed severe pumping restrictions at the state's two largest water delivery systems in order to protect an endangered fish called the Delta Smelt. The court's decision would eventually lead to the largest court-ordered water supply reduction in California history.



Lake Mead, circa 2007; the result of an 8-year drought on the Colorado River Watershed

On June 14, 2007, the Long Beach Board of Water Commissioners declared an Immediate Need for Extraordinary Water Conservation. The first governing board in California to do so, the Commission made the declaration in order to mitigate the expected impacts of a looming water supply shortage on Southern California. The declaration was necessitated by

several factors: 1) The profound impact of

a U.S. District Court's Federal Endangered Species Act ruling which protected the delta smelt by severely curtailing water deliveries from the San Joaquin-Sacramento Delta during the months of December to June; 2) Dramatic reductions in water storage levels in key reservoirs in northern California; 3) Record low rainfall in the Southern California coastal plain; 4) A continuation of the historic 8-year drought in the Colorado River Watershed, which serves as a significant source of imported water for Southern California. Under the declaration, the Department strengthened its public outreach and education efforts, urging residents to find effective ways to reduce their daily water consumption. In what would turn out to be an outstanding and sustained response, the city's citizens heeded the calls for water conservation.

At the peak of the water conservation effort, citywide water use was nearly 18 percent lower than the city's historical ten-year average (September 1998 - October 2007). The sustained effort drove citywide

per capita water use down to nearly 100 gallons per day, with the statewide per capita rate tracking closer to 200 gallons per day. In fact, from 2009-2011, annual citywide water use reached a level that was equivalent to citywide water use in 1966, despite an increase in the Long Beach population of 100,000 people. As a result, per capita water use in the city fell to a level not seen since 1945.

Informing and educating customers about where the city's water comes from, and how to conserve and use it efficiently was the basis for introducing the Beautiful Long Beach Landscape Grant Program that commenced in 2007. For many residents, businesses, schools and other organizations, transforming grass lawns into California Friendly landscapes was initially a somewhat foreign idea. It was expected that some people would hesitate to remove their lawns in favor of drought-tolerant landscapes. However, considering that a high percentage of the city's water supply goes toward outdoor landscaping (i.e. lawns), it seemed like a great opportunity to generate additional water savings throughout the city. The program would eventually prove to be a great success.

Another target of the water conservation program was to replace inefficient, obsolete sprinkler



Weather Based Irrigation Controller

timers at the local schools with more advanced technologies, such as Weather Based Irrigation Controllers (WBICs). WBICs are automated controllers that come equipped with a weather station that monitors and analyzes the local weather, communicating to sprinkler systems the times at which they should or should not operate. The amount of water that can be saved and the associated reduction in costs that can be

achieved by using this kind of technology is significant.

With new citywide water use prohibitions now in place, the Department began to ramp up its water conservation campaign. To support this new effort, the Department developed an easily identifiable brand for the campaign. For several years the "Stop Wasting Water" theme and logo were widely used in the

Department's advertising and promotional programs and could be seen and recognized by residents throughout the city. Helping drive the visibility and importance of the campaign were the numerous stories of drought and water shortages that were becoming more common in the news. Although the severity of the situation helped to get the message across to customers in the short-term, the long-term goal of the conservation program was to instill in the people the idea that while Southern California Storical won't always be in a drought, people need to rethink the way they use water so that

STOP Wasting Water

Stop Wasting Water Logo

An inside look at....Volunteers Long Beach Water Ambassador Program



Formed in 1999, the Long Beach Water Ambassadors are a valuable part of the education and outreach efforts of the Long Beach Water Department. The idea to create this volunteer group was originally brought about by former Water Commissioner Charles H. Parks. Commissioner Parks saw the need for a group whose sole focus was to connect with the community on water-related issues

The Ambassadors serve at the front line,

representing the Department at various community and civic events. The Ambassadors are well known for their "can do" attitudes, but also for their knowledge of the water issues that affect Long Beach residents.

The Ambassador Program, in conjunction with the Department's educational activities, have developed a dedicated following within the Long Beach Unified School District. The Ambassadors frequently visit classrooms and teach lessons such as the "World of Water" and "Plumbing the Colorado River". Since 1999, the Ambassadors have visited many classrooms in the Kindergarten thru 5th grade levels. The activities designed and taught to students coincide with pre-developed grade standards and serve as a great benefit to teachers, students and the Water Department.

A well planned and cohesive approach for its Ambassador Program has allowed the Department to be involved and interact year after year, with residents and students, reminding them of the importance of water to the community.

The Department is thankful for all of its past and present volunteers for making the Water Ambassador Program one that the Department and the City of Long Beach can be proud of.





world of

plumbing the colonor

conservation is a permanent, not a temporary, lifestyle change.

The housing and stock market boom in previous years came to an abrupt end and proved to be a precursor to what would become a worldwide recession. By 2008, the "global recession" had taken hold, with unemployment rising and the housing industry crashing. This was the climate the country faced as Americans voted in President Barack Obama. Despite the uncertainty of the economic recession, the Water Department continued to operate in a fiscally sound manner. With a significant drop in the costs of materials and an increasingly competitive bidding environment, the Department was able to complete many of its CIP projects well under engineering budget estimates, keeping the Department's expenditures much lower than expected.

In 2008, testing was about to begin at the newly completed Under Ocean Floor Seawater Intake and Discharge Demonstration System Project. A critical piece of the overall seawater desalination program, this environmentally-friendly project would draw in seawater in a way that would negate or minimize the ecological impacts typically associated with open ocean intakes. By percolating seawater through a slow sand filtration process, the under ocean floor intake



Aerial view of the Under Ocean Floor Seawater Intake and Discharge Project

system avoids the ecological effects of entrainment and impingement commonly linked to open ocean intakes. Similarly, the technology would be applied to the discharge of the brine concentrate stream in order to minimize the environmental impacts of the brine plume that results from the desalination process. The under ocean floor intake system would also provide synergistic benefits as it acts as both an intake and pretreatment system. The testing of this phase of the project was expected to last 18 months but research at the facility would ultimately continue for several additional years as a result of multiple permit extensions received by the Department from the California Coastal Commission.

In May of 2008, the Department welcomed a new MWD Director who would represent the Water Department and the City of Long Beach on regional water supply matters that came before the MWD Board. Suja Lowenthal, a Long Beach City Council Member, was appointed to replace Helen Z. Hansen at the end of Hansen's term. Dr. Lowenthal filled the position with several years of water industry experience under her belt.

In June 2008, Governor Schwarzenegger officially declared a drought. By then, the City of Long Beach was well on its way to becoming a leader in water conservation. Along with being recognized for its innovative

efforts to educate the public on water conservation, the Department also caught the eye of Huell Howser, a television

personality and producer of the television series "California's Gold" on PBS. Huell interviewed General Manager Kevin Wattier on several occasions to highlight not only what the Department was doing with water conservation, but also about the Department's efforts to explore the possibility of supplementing the city's water supply with desalinated seawater.

In the late 2000's, the Water Department continued to recognize that water efficient landscaping was the wave of the future. To promote this, the Department held a citywide water efficient Landscape Giveaway. General Manager Kevin Wattier



California's Gold host Huell Howser with

One of the 9 winning yards in the landscape

of nine free drought-tolerant landscapes (one in each council district). The Department believed this would be an effective way to further promote these kinds of landscapes. This pilot program would prove to be the catalyst for a much larger-scale program in the coming years, which would come to be known as the Lawn to Garden Program.

Residents could enter into the drawing for a chance to win one

By 2009, the national and state economies were continuing

to worsen. Foreclosures were abundant and people were conserving money and resources on many fronts. While bad for the economy, it was good from a water conservation perspective, as the Department was seeing a 17 to 18 percent reduction in citywide water use from historical levels, with some of that likely due to the economy. Meanwhile, most of the research on the seawater desalination project had been completed and it was time to do a feasibility study and cost analysis on the construction of a full-scale facility. While Department staff knew that desalinated seawater was a relatively expensive source of water compared to imported water and groundwater supplies, just how expensive would be shown by the results of the study.

In a major milestone for California water issues, in November 2009, Governor Schwarzenegger and state lawmakers crafted a comprehensive plan to meet California's growing water challenges. A bipartisan deal was agreed to, aimed at ensuring a reliable water supply for the state and restoration of the Sacramento-San Joaquin Delta and other ecologically sensitive areas. The plan was comprised of four policy bills and an \$11.14 billion General Obligation bond. The package established a Delta Stewardship Council, set ambitious water conservation policy, ensured better groundwater monitoring, and provided funds for the State Water Resources Control Board for increased enforcement of illegal water diversions. The bond was supposed to fund, in conjunction with local cost-sharing, drought relief, water supply reliability, Delta sustainability, statewide water system operational improvements, conservation and watershed protection, groundwater protection, and water recycling and water conservation programs. While originally set for the

November 2010 Ballot, the proposed Water Bond was delayed twice, with its status at the time of this writing still very much uncertain.

Something that was more certain at the time was the obvious progress that the Department had made in improving the reliability of its infrastructure. Since the early '90s, the Department had embarked on an aggressive and comprehensive cast-iron water main replacement program. The average annual number of main breaks occurring in Long Beach had fallen dramatically since the program's inception. In 2009, the Department achieved a record low number of main breaks, with only 26 breaks occurring throughout the year. This was a big difference from 20 years prior, when well over 100 main breaks could be expected to occur each year. The Department's proactive investment in its water infrastructure was clearly paying big dividends for the city and its residents.



Crews work to replace old cast-iron mains throughout the city

Once the Department's nine original drought-tolerant landscape giveaway

projects were awarded and completed, more Long Beach residents began to take notice of the beauty and uniqueness of these kinds of landscapes. As a result, other residents became interested in moving to a more "green" or "sustainable"

Over 500 homes completed Lawn-to-Garden Projects within the first 18 months of the Program

lifestyle. People could see that not only were the yards beautiful, but they could provide homeowners with substantial water (and cost) savings. It was April 2010 when the Water Department decided to launch the Lawn to Garden Turf Replacement Incentive Program. The program targeted the city's residential and business customers. Participating customers could receive \$2.50 per square foot of lawn removed, with a maximum of

1,000 square feet per project, or \$2,500 total. This was an

incentive level that seemed to encourage more than just the "free riders" to apply for the program. When the program

launched in 2010, removing lawn and replacing it with California Friendly plants was still considered somewhat of a progressive idea in Southern California, but it was a challenge the Department welcomed with open arms. Adding to the challenge was the overarching question of how to get people to change their preconceived notions of grass lawns and drought tolerant landscapes. Fortunately, once funding was made available to the public, interest in the program grew exponentially and a new ethic was born. In fall 2010, just six months after the program's launch, the 100th new drought tolerant landscape was finished, proving that the program resonated positively with residents. A year later, the 500th yard conversion was completed, which turned out to be one of many great milestones that would be recognized during the Department's Centennial Year.

In 2011, the Long Beach Water Department celebrated its 100th Anniversary. It was the perfect time to reflect on the significant progress that had taken place since the Department was first established. At the department's 100th anniversary celebration, employees buried a time capsule that contained printed pieces and photographs which were relevant to the present time, in hopes that in another 100 years it would be opened and appreciated by future employees of the Water Department.

In addition to the year-long 100th Anniversary celebration, several other noteworthy things were happening at the Department. The process of implementing a much needed new utility billing system was in the works, monthly water conservation records were continuing to be broken on a regular basis, and critical capital projects aimed at further improving the reliability of the Department's water and sewer systems were being planned and constructed throughout the city. In order to further capitalize on the momentum of the efforts by Long Beach residents to permanently

reduce water consumption, Water Department General Manager Kevin Wattier came up

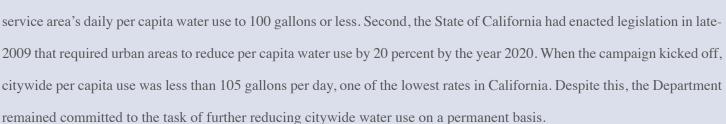
with the idea for a new campaign that would attempt to reduce citywide

per capita water use to 100 gallons per day, or less, by the end of the

Department's 100th Anniversary. Out of this, the "100 by 100" Campaign was initiated.

The importance of the campaign was two-fold. First, the MWD Board of Directors had

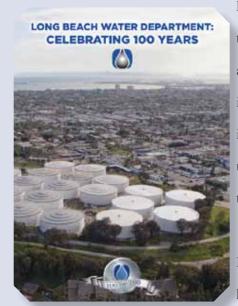
recently voted to guarantee the water supply of any member agency that could reduce its



The celebration of the 100th Anniversary continued deep into 2011. Throughout the year, several special anniversary

"100 by 100" Logo

sections were published in local newspapers and magazines highlighting not only the history of the Department, but also its focus and priorities going into the future. The Press Telegram ran a three-day set of stories on the Department, while the



Long Beach Business Journal's Publication celebrating the history of the Department

Long Beach Business Journal created a wonderful in-depth publication celebrating the Department's first 100 years. Late in the year, a new website was developed and implemented by the Department in order to enhance the user experience and interaction with the Department and its programs. In addition, social media was increasingly being used to communicate to customers and the public about the most up-to-date water and sewer related issues and events that were happening throughout the city.

As the Department put the finishing touches on its 100th year of service to the Long Beach community, it looked optimistically toward the future. The first 100 years had been ones of continuous growth, change and adaptation. What has remained unchanged throughout the years is the Department's unwavering commitment to provide reliable, high-quality and cost-effective drinking water to its customers. To

build on its prior successes, it needs to focus on several priority areas going forward. The first area is water conservation. Conservation will continue to provide the most cost-effective source of water compared to its alternatives. While per capita water use in the city is one of the lowest in California, there is much more that can be done by residents and businesses alike to reduce their inefficient uses of water. The second area is continued development and utilization of the Central Basin Aquifer. Because much of the space in the Basin is unused at this time, the Department will continue to work with its allies, both in and out of the courts, to put this underutilized space to beneficial use in the future. The third and final area is the expansion of recycled water infrastructure throughout the city. Many parks and other green spaces in Long Beach already use recycled water, but there are many other areas where recycled water has the potential to be used as a substitute for potable water supplies.

While it's difficult to know what the future holds for water supplies in Long Beach or the State of California, the Long Beach Board of Water Commissioners and all of the employees at the Long Beach Water Department will always do their jobs in a way that looks out for the very best interests of the people of Long Beach.



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