

# Sustainability Plan Progress Report

Goleta Water District Sustainability Plan  
FIVE YEAR UPDATE

2016-2017



# ***District Mission***

***To provide an adequate supply of quality water at the most reasonable cost to the present and future customers within the Goleta Water District.***



## **ACKNOWLEDGEMENTS**

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***Sustainability** is commonly defined as the responsible management of economic, environmental and social resources to meet the needs of present and future generations.*



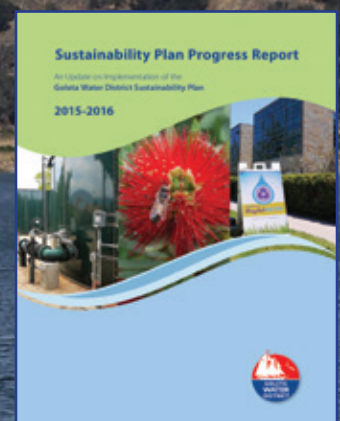
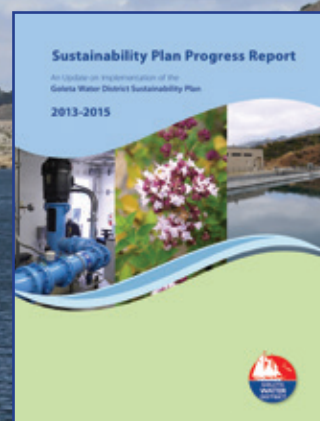
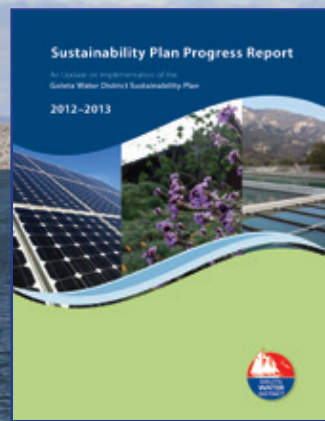
# INTRODUCTION

## **Five Years of Sustainability:**

2017 marks the fifth year of implementing the Goleta Water District Sustainability Plan. The environment in which the District operates has changed considerably over that five-year period. In 2012, surface water supplies were plentiful, the Goleta Groundwater Basin was full, and the District was not relying on imported water through the State Water Project to meet customer demand. At the same time, the District was one year into what would become the most severe drought on record in the history of the Goleta Valley. Lake Cachuma dropped to as low as 7% of capacity, imported water availability hit record lows, and groundwater replaced water from Lake Cachuma as the primary source of supply for District customers. Investments shifted from initiatives like hydroelectric turbines and solar energy projects, to activities that focused on strengthening the reliability of District water supplies and the infrastructure necessary to pump and deliver groundwater to customers.

The Sustainability Plan was designed to be adaptable and capable of adjusting to changing conditions and the dynamic drought environment over the last five years has tested that adaptability. Looking back and reflecting on progress the District has made implementing specific initiatives included in the Sustainability Plan and subsequent Progress Reports, as well as evaluating how approaches for meeting the fundamental principles of this Plan have shifted, allows the District to move forward more effectively. This Progress Report and Five-Year Update does just that: it highlights outcomes from District activities that have produced economic, environmental, and social benefits over the last five years, while taking a deeper look at progress made over the last year. The reader will note this consistent theme throughout the report – the Sustainability Plan has adapted to the evolving nature of the District’s service delivery environment, and continues to serve as a living document that guides decision-making and reviews the outcomes of District activities through the lens of Sustainability.

Looking to the next five years, the District Sustainability Plan will continue to adapt and grow. We cannot know for certain what the future may bring, but the opportunity to reduce the environmental impact of operations, minimize costs, enhance water supply reliability and emergency preparedness, and keep customers informed remains a key component of fulfilling the District’s mission of providing quality water at a reasonable cost well into the future.



## Five Years of Progress

Many of the 57 sustainability initiatives implemented over the last five years have saved the District both money and energy, helping to minimize some of the increased operational costs associated with a shift in operations necessitated by the drought. Focused investment in well infrastructure, efficient equipment, and groundwater basin management has enhanced emergency preparedness and allowed the District to reliably meet the minimum public health and safety needs of the community with groundwater alone. From a business and customer service perspective, implementing initiatives such as the District e-Billing system, technology improvements, employee programs, and drought outreach has improved customer interactions with the District and kept the community informed during the evolving water shortage. Operationally, activities such as the Fleet Replacement Program, the use of electronic devices in the field to optimize field operations, and building efficiency improvements have realized significant environmental improvements and cost savings, while improving the safety and productivity of District employees. The pages ahead provide noteworthy examples of the outcomes resulting thus far.

## Plan Organization

At annual intervals, the District reflects on how its activities have produced sustainable outcomes, and adjusts its approach accordingly. This Sustainability Plan Progress Report is organized into four sections:

- **Introduction** reflects back on the previous five years of implementing the Sustainability Plan, including highlights of sustainable outcomes from initiatives and activities implemented since the development of the original Sustainability Plan.
- **Guiding Principles** describes how the three original Guiding Principles have “taken on new meaning” in a changing service delivery environment, and identifies District strategies for producing outcomes consistent with the Principles going forward.
- **Strategic Investment Across the District** illustrates how District initiatives produce sustainable benefits, including annual performance highlights from previously established initiatives, and “new” initiatives planned or underway for each service delivery category. This section is organized under three distinct service delivery categories:
  1. **Customer Service and Business Operations**
  2. **Administration Buildings and Fleet Management**
  3. **Water Supply, treatment, and Distribution System Investment**
- **Progress at a Glance** provides a summary of all District Sustainability initiatives, organized by service delivery category, as well as the Guiding Principle(s) with which initiative outcomes align (i.e., economic, environment, social).

# 5-Year Sustainability Highlights



Significant environmental and economic savings from electronic billing (“e-Billing”), currently used by 38% of District customers. This has resulted in a 25% reduction in monthly customer walk-ins, from 850 in 2012 to 650 in 2017, saving customers time, miles driven, and related fuel use and greenhouse gas emissions. Over the five-year period, the e-Billing program has also saved over 25,000 pounds of paper that would otherwise have been used for bills, envelopes, and check payments, saving 250,000 gallons of water and 10,000 pounds of greenhouse gases.

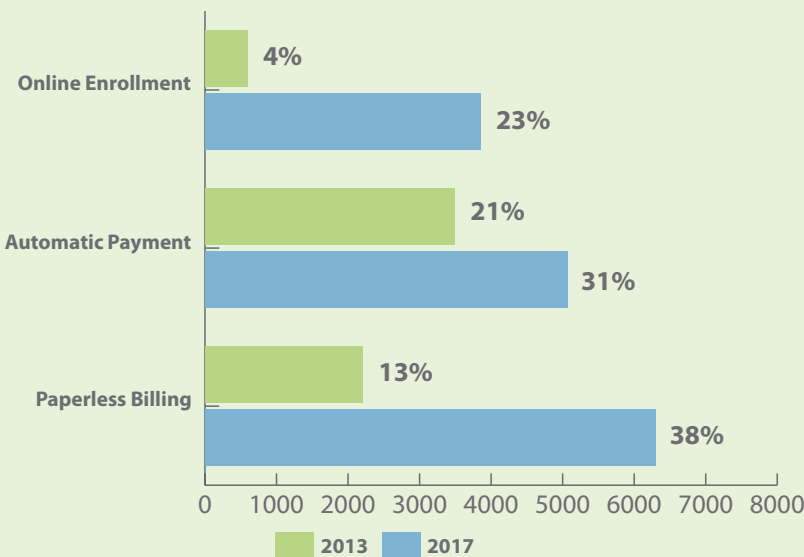
Sick leave hours due to illness or injury have dropped by over 30% from 6,900 hours in 2011 to 4,710 hours in 2017, reducing costs related to healthcare, workers’ compensation rates, and lost time by 20%. Programs such as the Workplace Safety Program and the grant funded Employee Wellness Program support healthy, safe work environments consistent with the social component of sustainability, while enhancing economic sustainability by minimizing operational costs.



Since 2012, District residential customers reduced their already-low per capita water use during the drought, from 66 (2012) to 48 gallons per customer per day (GPCD) in 2017. System-wide, demand decreased by 25% across all customer classes. This amounts to approximately 3,270 acre feet, or 1 billion gallons of water saved since 2012.

## Since its implementation, E-Billing enrollment has increased steadily:

Customer Enrollment in Electronic Billing Features



# 5-Year Sustainability Highlights

Since adoption of the Sustainability Plan in 2012, the District has cut electricity use at its Administrative Office 10%, saving over 2,600 kWh over the 5-year period. Examples of building efficiency improvements include heating/ventilation/air conditioning (HVAC) improvements, LED lighting upgrades inside and out, and installation of solar light tubes to harness daylight for natural office lighting.



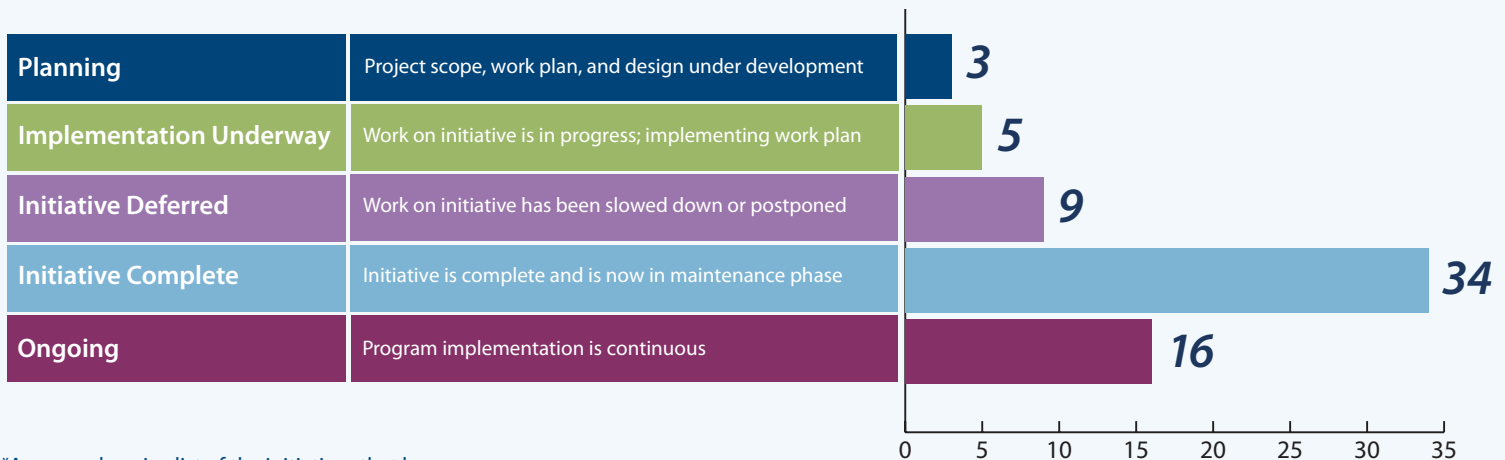
Despite driving approximately 5% more miles in 2016-17 compared to 2011 due to drought-related activities, fuel usage has dropped 26% due to the addition of vehicles with improved fuel efficiency, eliminating 118 metric tons of carbon dioxide.

Installation of high-efficiency motors, pumps, and variable frequency drives has allowed the District to streamline the sequencing of key distribution facilities to save energy, emissions, and reduce costs.



## Initiative Implementation Progress Status Overview

The bar graph below provides a snapshot of the 67 Goleta Water District Sustainability Plan initiatives in each stage of progress.\*



\*A comprehensive list of the initiatives that have been included in the 2012-2017 Sustainability Plan and their relative status is provided on page 26.

# Guiding Principles

The District’s Sustainability Guiding Principles developed in 2012 still provide the foundation for actions: a sustainable service delivery model that balances economic, environmental and social principles is a central component of upholding the District’s mission to provide safe, reliable, affordable water supplies for current and future customers. That said, over the last five years these principles have taken on new meaning. Severe drought, regulatory changes that threaten to alter long-term water supply reliability, and an aging distribution system have tested what it means to be a “sustainable” water provider. The District is faced with new challenges and opportunities, and the key initiatives that put the Guiding Principles into action will help the District continue to achieve outcomes that provide economic, environmental, and social benefits to the District and its customers.



## Economic Principle

### Enhanced value creation and service reliability for District customers

The District’s water service delivery and daily decision-making will consider sustainable approaches that **create value** for District customers now and into the future. Strategic infrastructure investments, cost effective business operations, and water supply management can help **ensure the highest level of reliable service** for District customers.

#### *Strategies for producing outcomes consistent with the Economic Guiding Principle include:*

- Create pathways for alternative revenue sources and funding streams.
- Maintain, rehabilitate and improve infrastructure and processes at the CDMWTP.
- Maintain investment in the groundwater basin and well infrastructure.
- Mitigate water supply risks, preserve potable supplies, and seek out alternative sources of local water supplies.
- Implement programs that minimize water loss, maximize accounting of water use, and keep pace with technological advances.

#### *What has changed?*

*Increasingly, the District has been implementing projects that offset the increased costs associated with changing operations during the drought, while simultaneously minimizing energy use through the use of efficient equipment and advanced technology. Looking ahead, continued investment in preventative maintenance on the District’s aging distribution system and infrastructure is growing increasingly critical to providing the highest possible value to the community while minimizing costs.*





## Environmental Principle

### Resource stewardship, adaptability, independence, and emergency preparedness

The District will position itself for **greater independence and emergency preparedness** by reducing reliance on external business inputs including electricity, natural gas, and petrol, while simultaneously increasing reliance on locally controlled sources of water. Even with climate change, these actions will help **protect the District** from impacts associated with weather variability and other externalities.

#### Strategies for producing outcomes consistent with the Environmental Guiding Principle include:

- Maintain, replace, and improve the efficiency of the District’s water distribution system and mechanical equipment.
- Improve the sustainability of the District fleet and heavy equipment.
- Minimize the environmental impacts of District administrative operations through employee education, building retrofits, and other property improvements.
- Explore and invest in renewable energy installations including solar and hydropower.
- Ensure the District’s preparedness for natural disasters and other unplanned emergencies.

#### What has changed?

*The District’s water treatment and distribution system were designed to use the natural slope of the mountains, the coastal shelf and the power of gravity to energize a complex system that delivers local supplies from Lake Cachuma. The uncertain reliability of surface water supplies and growing importance of the Goleta Groundwater Basin will necessitate increased groundwater production and injection, and the energy and infrastructure needed to move water through the system. While new investments to help manage the basin and deliver water to customers will undoubtedly present a challenge, they provide an opportunity to design projects that partially offset costs associated with energy usage, and emissions.*



## Social Principle

### Healthy Communities and productive work environments

As a provider of a lifeline resource, the District will **support healthy communities** through the provision of quality water to the public and a governance structure that supports civic involvement and public transparency. Additionally, daily actions and work environments will consider the **enhancement, productivity and safety of the District workforce** while making positive contributions to the well-being of the community in which it operates.

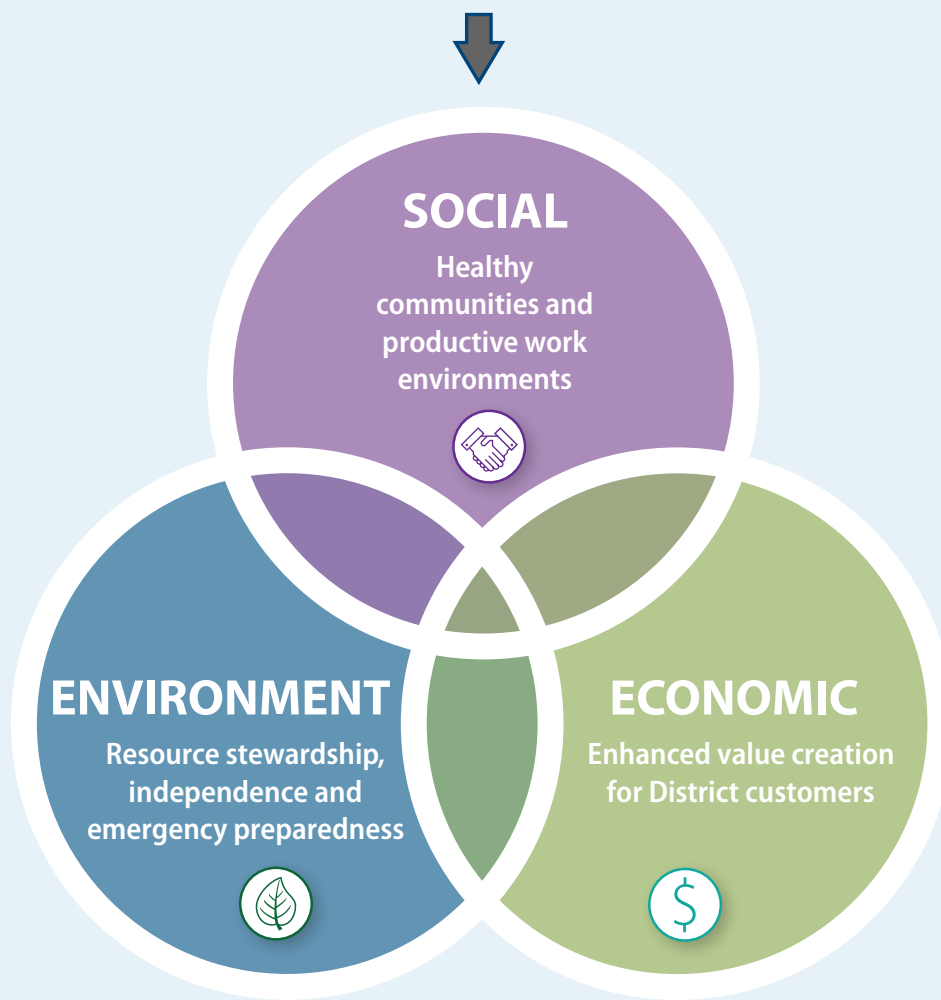
#### Strategies for producing outcomes consistent with the Social Guiding Principle include:

- Improve community education and public engagement.
- Implement a suite of rebate and incentive programs to promote water conservation by District customers.
- Enhance the safety, wellbeing, and productivity of the District workforce.
- Ensure the ongoing delivery of safe, clean water supplies to protect the health and safety of the community.

#### What has changed?

*Six years into a historic drought, the District has a renewed focus on meeting the health and safety needs of the community through investments that ensure continuous delivery of clean, safe, adequate water supplies. This creates resiliency for drought, fires, and other natural disasters.*

# How it Works



Benefits consistent with the guiding principles result from implementation of key initiatives.



## Strategic Investment Across the District

### Key Initiatives

Meeting short-term production targets and long-term sustainability goals requires strategically balanced investment in all areas of District service delivery. As a water provider, an obvious focus and investment priority is the **water supply, treatment, and distribution system** that delivers water to over 87,000 people in the Goleta Valley. In addition to water supplies, smart investments are made across all categories of District operations, from its daily **business operations and customer service** to the long-term maintenance of its **administration buildings and fleet** of vehicles and heavy equipment. The pages that follow provide summaries of initiatives the District is undertaking that fit within the framework of the Sustainability Plan, as well as notable outcomes from existing initiatives that align with the Guiding Principles. Looking ahead, new projects will provide improvements needed to meet new regulatory requirements, while offering economic benefits in the form of reduced energy costs, minimizing impacts to natural resources, and supporting a healthy community.

# Customer Service and Business Operations

Incorporating sustainability into everyday operations, policy development, and decision-making presents opportunities to reduce costs and inefficiencies, streamline operations, increase revenue, and seek out new resources.

The following summaries highlight the sustainable **outcomes** associated with District customer service and business operations activities, organized by the central project **benefits** that are consistent with the Sustainability Guiding Principles.

## Annual Performance Highlights



### *Improved community education and public engagement.*

- Made over 3,300 visits to customer's premises to investigate water-related issues.
- Gave drought and conservation-related presentations to approximately 10 community groups, and reached more than 300 students over the course of the year through school presentations (Initiative 1.20).
- Expanded and upgraded a user-friendly website, including the addition of "Drought Portals," that provide up-to-date information on supply and demand for each customer segment.



### *Enhanced safety, wellbeing, and productivity of the GWD workforce.*

- Developed and implemented an **Employee Wellness Program** that includes monthly newsletters, subsidies for pedometers, healthy snacks, and monthly prizes for employees who meet their fitness goals. Approximately 23% of the workforce is participating in the program, with 12% of the workforce having purchased pedometers, and participants collectively losing 54 pounds.
- Administered staff training courses related to workforce safety, including over 450 hours of required safety compliance training (Initiative 1.5).



### *Created pathways for alternative revenue sources and funding streams.*

- Received \$2,000 for the Employee Wellness Program, and over \$20,000 in rebates from Southern CA Edison for energy-saving water distribution equipment (Initiative 1.9).
- Completed the Potable Reuse Facilities Plan, Stormwater Resource Plan, and Urban Water Management Plan to help position the District for existing and future state and federal grant programs (Initiative 3.5).
- Submitted and received approval of a pre-application through the California Governor's Office of Emergency Services to fund critical projects that help protect the health and safety of the community including water quality (Initiative 1.9).



### *Potable water supply preservation and use of alternative local supplies.*

- Completed a Potable Reuse Facilities Plan, which explores the feasibility of expanding the treatment and use of recycled water in the District.
- Completed a Stormwater Resources Plan that studies potential opportunities for stormwater capture in the District.

# Customer Service and Business Operations



## *Implemented incentive programs to promote water conservation by GWD customers.*

- Issued 224 rebates under the District Smart Landscape Rebate Program, leading to the removal of approximately 180,000 sq. ft. of turf and estimated water savings of 188 acre feet per year (AFY) (61 million gallons) (Initiative 1.24).
- Issued 20 rebates under the Water Saving Incentive Program for creative water saving projects for institutional and commercial customers, which saved an estimated 16 acre feet (AF) (5.2 million gallons) of water and associated costs to customers in 2016 (Initiative 1.24).
- Initiated a mulch rebate program through the Santa Barbara County Mulch Delivery Program, resulting in over 50 mulch deliveries which slow evaporation, reducing water used for irrigation (Initiative 1.24).



## *Ensured the ongoing delivery of safe, clean water supplies adequate to protect the health and safety of the community.*

- Completed comprehensive updates to foundational District planning documents, providing a renewed critical framework for managing water supplies now and into the future.
  - Updated the Groundwater Management Plan to reflect dynamic conditions in groundwater levels throughout the Goleta Basin and plan for future Basin recovery efforts (Initiative 1.17).
  - Updated the Water Supply Management Plan to provide a strategy for enabling the District to determine the most effective approaches for using available water supplies under both dry (drought), average, and wet conditions (Initiative 1.18).
  - Updated the District's Urban Water Management Plan to reflect revised supply projections in future years and account for long-term projected water demands in the Goleta Valley (Initiative 1.19).
  - Updated the District's USBR Agricultural Water Management Plan to reflect observed water savings and changed agricultural practices in the community.



**\*Did you know?** The District has issued a total of 617 conservation program rebates totaling over \$400,000 since declaring a Stage III Water Shortage Emergency in May 2014, helping District customers save a total of over 340 AF (110 million gallons) of water over a two-year period. That's enough water to serve 680 Goleta households for one year!

# Customer Service and Business Operations

## Featured Story

### *Drought outreach, community education, and public engagement*

Public outreach to customers has increased significantly since the Sustainability Plan was initiated. In 2012, District outreach generally included a biannual Newsletter, monthly billing statement messages and inserts to customers, the District Website, and outreach at events. In response to the drought, the District has expanded on this outreach to include a number of additional general, programmatic, and targeted communications programs for customers. This includes the Stage II and Stage III Drought outreach campaigns that included:

- Targeted programmatic outreach for conservation incentive programs.
- Online Drought Portals for each customer class.
- A Social Media Program to provide an additional channel for customers to access conservation tips and information.
- The Customer Class Scorecard Program for high volume water users, which grew to include 7,700 rebate and conservation checkup postcards, 6,200 Thank You Postcards; 800 Take Action Postcards; and over 1,100 letters and phone calls.
- 17,500 automated calls.
- More than 1,500 TV and Radio ad airings.
- Ten weeks of online advertising and 8 print ads.
- Distribution of 2,000 conservation signs to restaurants, gyms hotels, recycled water customers and Smart Landscape Rebate Program participants.
- A redesigned website optimized for mobile devices, including the integration of Facebook, Twitter and YouTube.



### *Sustainable Outcomes and Benefits:*



Informational materials and rebate programs add value for customers by providing them with resources and incentives to conserve water and save money.



Outreach and conservation programs designed to provide information and conservation tools to customers resulted in a system-wide demand reduction of 30%, adding to the reliability and sustainability of community water supplies during a water shortage emergency.



Increased outreach has kept customers informed during dynamically changing conditions by providing important updates on the drought, information on water use restrictions, and education and information on the District's rebate programs designed to help customers increase conservation.

# Customer Service and Business Operations

## Looking Ahead

Customer service and business operations will continue to play a central role in District activities. Given the ongoing drought conditions and water supply shortage, District outreach, rebate programs, and interactions with customers will continue to emphasize the importance of conservation. Furthermore, the need to educate customers about where their water comes from, including potential new sources of supply, ongoing threats to existing supplies, and the costs and benefits associated with the various supply sources, is greater than ever. As external factors shift investment needs, District initiatives that produce positive outcomes that minimize operational costs, preserve the environment and natural resources, and benefit customers and the encompassing community, will remain a priority.

### Improved community education and public engagement

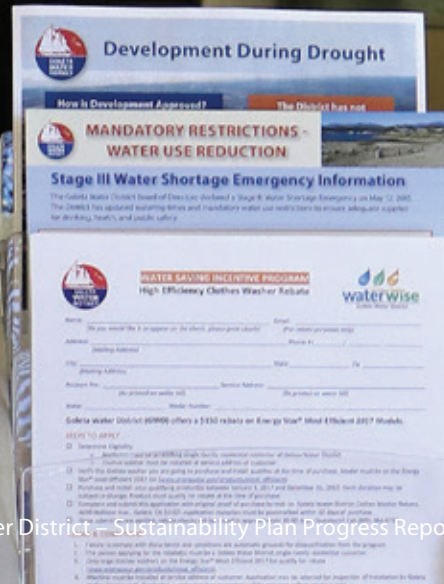
**Informing Customers About Water** – The District will expand its public outreach to increase understanding and awareness of how changing State and Federal regulations, aging infrastructure and climate change are likely to affect the cost of delivering water to the community.

**Anticipated Outcomes and Benefits:** Creating a common understanding of the role water plays in our daily lives is essential for the successful and sustainable management of the District's water supply portfolio and financial resources.

### Enhanced safety, wellbeing, and productivity of the GWD workforce

**Employee Wellness Program** – The program started in 2016 as a trial built upon three pillars: exercise, healthy eating, and lifestyle change and support. Thanks to positive feedback, ongoing interest, and renewed grant funding the program will continue in 2017.

**Anticipated Outcomes and Benefits:** Supporting employee wellbeing increases productivity while simultaneously reducing District costs related to healthcare, injuries, and lost time from sick leave.



# Administration Buildings and Fleet Management

Incorporating sustainability considerations into District investments and initiatives increases the financial predictability of operating and maintaining District-owned buildings, facilities, and heavy equipment.

The following summaries highlight the sustainable **outcomes** associated with District administration buildings and fleet management operations activities, organized by the central project **benefits** that are consistent with the Sustainability Guiding Principles.

## Annual Performance Highlights



### *Improve the sustainability of the GWD fleet and heavy equipment.*

- Replaced two aging vehicles to increase fuel efficiency and decrease emissions produced, cost savings for the District through avoided repair and maintenance costs, reduced fuel usage, and increasing productivity by avoiding downtime for repairs (Initiative 2.5).



### *Ensure GWD's preparedness for natural disasters and other unplanned emergencies.*

- Upgraded, resized and replaced pumps initially designed to serve groundwater under temporary emergency conditions to be capable of operating under drought conditions. The new pumps help the District meet the minimum health and safety needs of the community solely with groundwater, and provide redundancy in the system thereby increasing the District's ability to respond to natural disasters and unplanned emergencies.



### *Preserve potable water supplies.*

- Through the District's Recycled Water Hauling Program, delivered 14,500 gallons of hauled recycled water to seventeen customers for irrigation and construction purposes, offsetting the use of potable water while maintaining the health of trees and valuable landscaping that enhance the beauty of the community (Initiative 2.15).



### *Minimize negative environmental impacts of District properties.*

- Completed Phase I of Stormwater Improvements to the District Operations Yard to reduce, temporarily detain, and remove pollutants from stormwater runoff, including:
  - Relocating material storage bins.
  - Installing a trench drain.
  - Switching to permeable ground surfaces where appropriate.

These improvements have effectively reduced suspended solids in stormwater runoff from the site to insure compliance with new state regulations, while reducing negative impacts to nearby creeks and waterways (Initiative 2.13).



# Administration Buildings and Fleet Management



**DID YOU KNOW?** Administrative buildings at the Corona Del Mar Water Treatment Plant received LEED Gold Certification in 2010 improving resource preservation and the cost effectiveness of District operations.



# Administration Buildings and Fleet Management

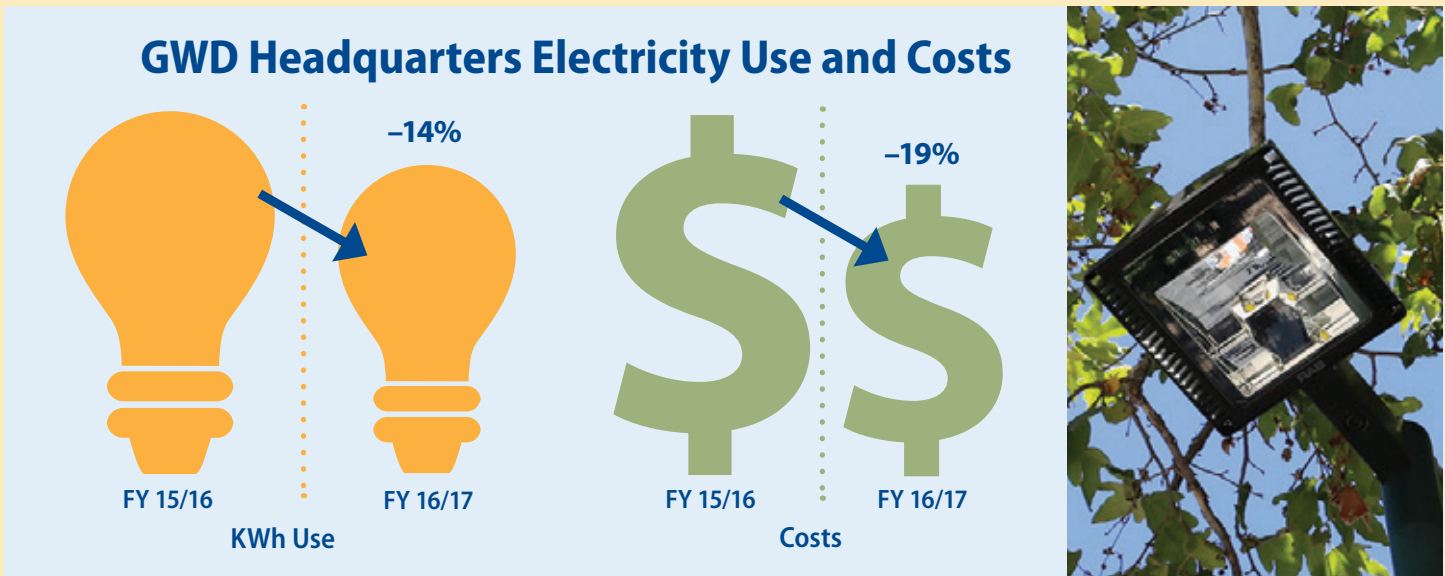
## Featured Story

### Administration Building Efficiencies



#### Reduced energy consumption at District administrative buildings.

The District reduced electricity use at its Administrative offices by 14% over the last year, yielding over \$6,000 in operational cost savings by simply modifying work environments and daily actions. For example, installation of additional solar tubes to harness daylight for natural office lighting, outdoor lighting upgrades to LED lights, reduced use of the office heating and cooling system while maintaining employee comfort, and behavioral changes such as turning off lights in unused areas of the office have contributed to the reduction in energy use.



### Sustainable Outcomes and Benefits:



Reduced Operational Costs – reduction in administrative building electricity costs by 19% reduces the District’s overhead operational costs. Additionally, reducing reliance on uncontrollable inputs, such as electricity, improves the District’s emergency preparedness.



Related reduction in carbon dioxide emissions of 237 metric tons. That’s greenhouse gas emissions from 50 vehicles driven for one year, carbon emissions equivalent to 253 thousand pounds of coal burned, and carbon sequestered by 225 acres of U.S. forests in one year..



Enhanced safety for employees and customers through improved outdoor lighting, while reduced greenhouse gas emissions contribute to a healthy community.

# Administration Buildings and Fleet Management

## Looking Ahead

Given the recent and ongoing need to focus District investments on water supplies and the distribution system, there has been a corresponding decrease in building and fleet-related investments. However, recognizing the various operational improvements associated with Initiatives in this category, the District will continue prioritizing projects that would significantly reduce operating costs, generate revenue, upgrade critical infrastructure, or comply with new regulations.

### *Improve the sustainability of the GWD fleet and heavy equipment*

**A Vehicle Charging Station** will be installed in the District parking lot to support the acquisition of electric vehicles under the District's Fleet Replacement Program, while also providing the community with access to an electric charging station. The District is pursuing grant funds available for this project, which would allow the District to recoup the cost of charging to make the project revenue-neutral.

**Anticipated Outcomes and Benefits:** Even as the District increases total miles traveled to maintain the groundwater wells, electric vehicles can offset emissions and fuel costs. Notably, workers are 20 times more likely to buy an electric vehicle if their employers offer free charging at work, according to a survey conducted by the Department of Energy.

### **Ongoing activities associated with existing initiatives that are scheduled for the year ahead include:**

#### *Minimize negative environmental impacts of District Properties*

Phase II of the **Stormwater Headquarters Improvements** project (Initiative 2.13) will include installation of a bioretention area in the customer parking lot that will allow for water to be infiltrated into the ground instead of storm drains.

#### *Minimize negative environmental impacts of District Properties*

The **Fleet Replacement Program** (Initiative 2.5) will incorporate more electric/hybrid vehicles into the District's fleet, reducing fuel and maintenance costs and associated greenhouse gas emissions.

# Water Supply and System Investment

Initiatives in this category support the core mission of the District, and are particularly critical during the drought. Comprehensive infrastructure planning and investment ensure the ongoing reliability of the distribution and treatment systems. Investment in sustainable infrastructure that is resource efficient, cost effective, replicates natural hydrology, and can adapt to a changing climate and other conditions provides multiple benefits to the District and its customers.

## Annual Performance Highlights



### *Ensure the ongoing delivery of safe, clean water supplies adequate to protect the health and safety of the community.*

- Conducted over 48,000 water quality tests throughout the 270 miles of distribution system piping, of which all tests met primary regulatory standards.
- Secured 1,500 AF of supplemental water supply, preventing the need to declare a Stage IV Water Shortage Emergency pursuant to the District Drought Plan.
- Conducted special flushing operations at over 85 locations to protect water quality, maintained and replaced over 90 fire hydrants to enhance fire safety, and planned hydrant flushing operations to minimize water loss by redirecting water to parks and open spaces when possible.



### *Maintain, rehabilitate and improve infrastructure and processes at the CDMWTP.*

- Completed design for Solids Handling Improvements at CDMWTP (Initiative 3.15) to prepare for higher surface water flows and increased solids removal from Lake Cachuma water, which helps maintain the high quality of surface water served to customers.
- Completed Van Horne Reservoir access road repairs to preserve the integrity of a critical reservoir, protecting water infrastructure while enhancing employee safety.



### *Implement programs that minimize water loss, maximize accounting of water use, and keep pace with modern technology.*

- Completed an assessment of the cathodic protection system on the most critical pipeline in the distribution system, and initiated design of a repair project to proactively protect this 42-inch pipeline. Cathodic protection prevents costly corrosion damage, further enhancing the reliability of the District water system (Initiative 3.8).
- Replaced major transmission and pressure valves to Lateral 9, increasing the District's ability to isolate pipelines for maintenance and repairs, while minimizing customer water service interruptions and reducing water loss from pipeline flushing.
- Completed a sub-metering project (Initiative 3.13) that included installation of flow meters on main lines in the distribution system to measure and monitor distinct water use in specific geographic areas.

### *The Water Energy Nexus*

Every gallon of water saved is a gallon of water that does not need to be treated and moved throughout the system. This saves water and energy, reducing the emissions associated with serving water to the community.

# Water Supply and System Investment

## *Maintain investment in groundwater basin and well infrastructure.*

- For the first time in the District's history, simultaneously operated nine groundwater wells to produce 6.3 million gallons per day, which exceeds the amount needed to meet minimum daily health and safety requirements of the community.
- Completed updates to the District's Groundwater (hydraulic) Model (Initiative 1.22) and the Groundwater Management Plan (Initiative 1.17) to reflect dynamic conditions throughout the Goleta Basin and plan for future Basin recovery efforts to support the long-term sustainability of this critical supply source.
- Successfully operated the CDMWTP under low volume conditions, which included shutting down and restarting the plant over 100 times when production from the wells supplied the majority of potable water to meet customer demands. The previously completed low flow by-pass line project at CDMWTP proved essential in efficiently treating water at reduced volumes.

## *Mitigate water supply risks, preserve potable supplies, and seek out alternative sources of local water supplies.*

- Processed 13 new projects involving the use of recycled water, including the first installation of a large dual-plumbed residential facility in the District using both potable and recycled water.
- Completed a Potable Reuse Facilities Plan, which explores the feasibility of expanding the treatment and use of recycled water by the District for groundwater replenishment.
- Completed a Stormwater Resources Plan that identifies potential opportunities for stormwater capture in the District.

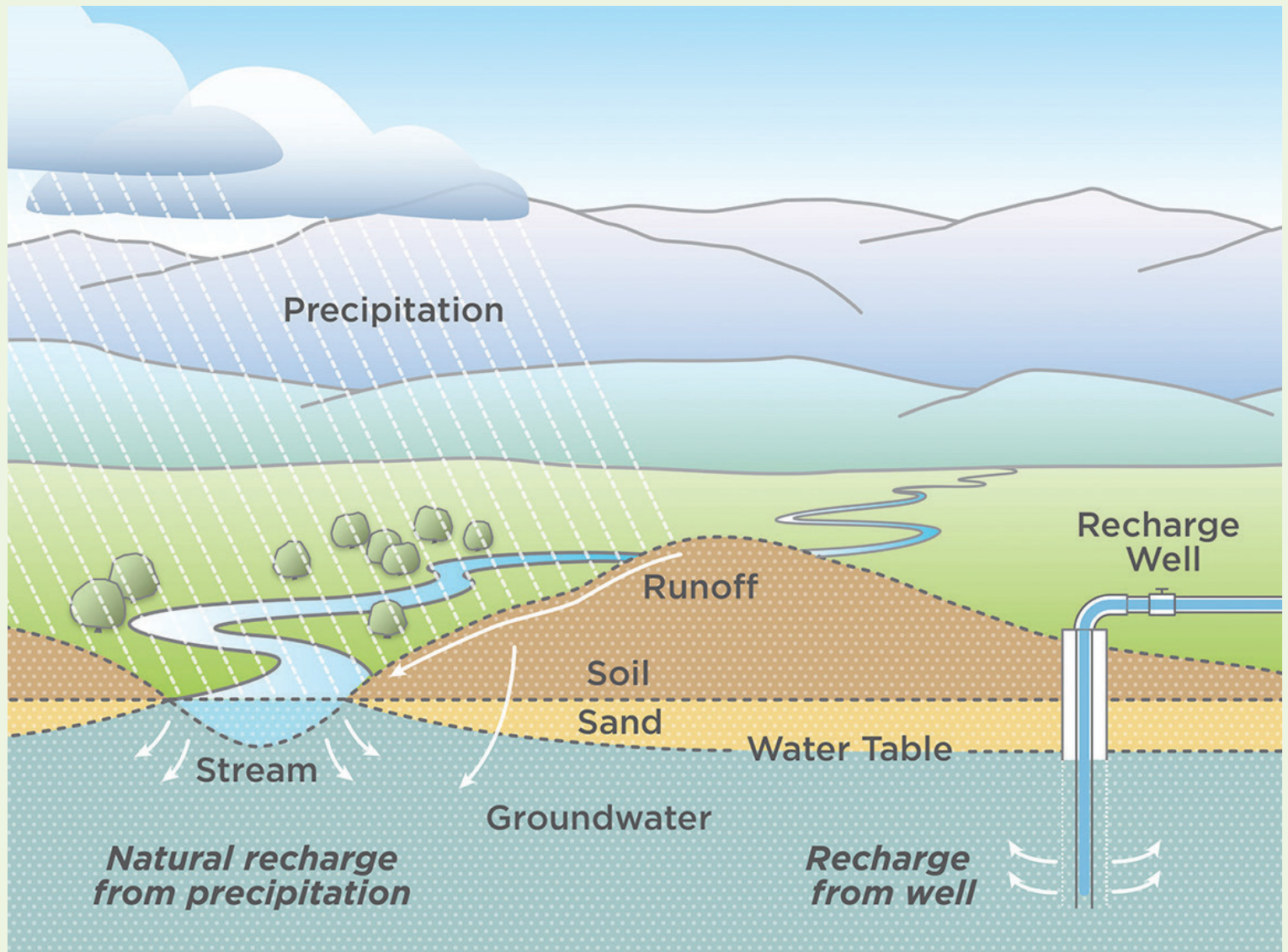


**DID YOU KNOW?** Groundwater typically comprises only 15% of District supplies, but was the District's primary source of supply during the drought when the availability of surface water supplies was reduced.

## Featured Story

### *Managing the Goleta Groundwater Basin*

The Goleta Groundwater Basin serves as the lifeline source of supply during droughts and water shortage emergencies. In fact, for the second consecutive year, production from wells provided the majority of potable water to meet customer demand. District wells can currently produce 6,000 AFY (nearly 2 billion gallons), an 80% increase in production capacity since the Sustainability Plan was adopted in 2012. Strategic investments in well rehabilitations, improvements, and capacity expansion ensure the highest level of reliable service for District customers, while improving energy efficiency.



**DID YOU KNOW?** The groundwater wells were largely dormant for the 20 years following the drought in the early 1990s. As it can take many years for the basin to recharge, the District is currently evaluating options for groundwater replenishment.

# Water Supply and System Investment

Key activities supporting groundwater sustainability that were implemented over the last year include:

- Completed upgrades and rehabilitation at San Marcos well facility that doubled well production capacity to 1,400 AFY. The increased production capacity is the equivalent of bringing a new well online at half the cost of a new well.
- Completed the Airport, El Camino, and San Antonio well rehabilitation and electrical upgrade and Variable Frequency Drive (VFD) installation projects to increase operational flexibility and increase production by approximately 1,200 AFY.
- Rehabilitated the Berkeley and Shirrell wells, the two highest producing of the District's four *small wells* which had not been used since 1992. As a result of the projects, groundwater production capacity was increased by an additional 500 AFY.

These investments ensure the highest level of reliable service for GWD customers.



*Two previously inactive District wells – Berkeley and Shirrell – were rehabilitated and are now online and producing water for the first time since the early 1990s.*

## ***Sustainable Outcomes and Benefits:***



Improved system performance and reliability will pay off over time by reducing costs for emergency repairs and maintenance.



Installation of Variable Frequency Drives allows the District to operate wells at specific, optimized speeds, which ultimately reduces power requirements and related electricity use.



Increased water production capacity to a level that allows the District to meet the community's public health and safety needs on groundwater alone in the event of an unexpected emergency or surface water supply interruption.

# Water Supply and System Investment

## Looking Ahead

Due to the ongoing drought and its lasting impacts on local water supplies, the Water Supply, Treatment, and Distribution System Investment category has demonstrated its criticality in the overall success of the District. This is likely to continue for the next several years, due in part to changing water quality conditions at Lake Cachuma that could present significant new challenges for water treatment. Burned debris from recent wildfires in the Cachuma watershed coupled with the decay of organic matter caused by the drought, will necessitate a shift in District operations to address degrading water quality this winter and spring. Additionally, State and Federal regulations, in the form of a draft State Water Rights Order and a pending Biological Opinion, pose a potential threat to the District's water supply portfolio. Even absent any reduction in current supplies, the District's recently adopted Water Supply Management Plan (2017) projects the need to develop additional sources of supply to help offset temporary shortages in future dry years. To proactively address this potential need, the District is exploring a Groundwater Augmentation Program (GAP) to accelerate replenishment of the Goleta Groundwater Basin, the District's primary supply during water shortages. Investments to upgrade the distribution system, protect water supplies, and ensure the consistent delivery of quality water to the community will be crucial to ensuring reliable service for District customers, today and into the future.

### *Maintain, replace, and improve efficiency of water distribution system and mechanical equipment.*

**Booster Pump Station Improvements** will include replacing pumps, adding redundant components, and upgrading the electrical system at pump stations throughout the District. Installation of additional variable frequency drives (VFDs) at Anita, San Marcos, San Ricardo, Berkeley, Shirrell, El Camino, San Antonio, and Airport wells will save electricity by allowing the operation of pump motors at desired, optimized speeds instead of higher-than-necessary, preset speeds.

**Anticipated Outcomes and Benefits:** With recent drought conditions and increasing the use of pumps to move large volumes of water through the distribution system, these improvements will add reliability, help meet water quality standards, improve the efficiency of mechanical equipment, and enhance staff productivity through the addition of automated operation. Upgrades to pumps, including installation of VFDs, will save electricity through increased efficiency and by optimizing the operation of pump motors.

### *Maintain investment in groundwater basin and well infrastructure.*

**Treatment Equipment Upgrades** are needed at several of the District wells, most of which are over 30 years old. As with any aging physical infrastructure, routine maintenance and repair is required at increased frequencies. In addition, groundwater quality is likely to change over time, and improvements to the treatment facilities at certain well sites are necessary. Well treatment upgrade activities scheduled for the coming year include water quality monitoring and enhanced treatment at San Ricardo and University wells.

**Anticipated Outcomes and Benefits:** Water quality improvements will support the continued delivery of safe, clean water supplies to the community while ensuring compliance with state and federal regulations.



# Water Supply and System Investment

*Ensure the ongoing delivery of safe, clean water supplies adequate to protect the health and safety of the community.*

**Water Quality Studies** will analyze historical, current, and future water quality of District wells and surface water to continue to meet State and Federal standards. Now that groundwater production can meet the minimum health and public safety levels of the District, investment has shifted to maintaining water quality and distribution, both of which are more challenging during the drought as Cachuma water levels remain low, and conditions in the groundwater basin change. Due to the shifting balance of sources and flow rates and to changing water quality from Lake Cachuma and the State Water Pipeline, two comprehensive studies will analyze water quality for corrosivity, trihalomethanes (THMs), organic content, and other chemical parameters.


































































**Anticipated Outcomes and Benefits:** These studies will enhance the District's ability to maintain delivery of safe, clean water supplies to protect the health and safety of the community. Should treatment processes require modification, the studies will help the District identify the most cost effective method for producing high quality potable water.
















*Implement programs that minimize water loss, maximize accounting of water use, and keep pace with modern technology.*

**Valve Replacement Program** – The District has approximately 6,000 valves throughout its water system. Valves are used to isolate the various sections of the 270 mile pipeline network and the 1,400 fire hydrants located throughout the system. Installation of new valves and replacement of existing valves on District mains will protect the distribution system and customer infrastructure.






























































**Anticipated Outcomes and Benefits:** Improvements will prevent service interruptions to critical customers, and minimize shutdown times related to repairs and maintenance, thereby increasing customer satisfaction. From an economic perspective, valve replacements will minimize the risk of unplanned or emergency repairs, overtime and nighttime work. Additionally, the replacements will reduce water loss and related costs from leaks and flushing of water mains for repair and maintenance.

# Overall Progress at a Glance

SERVICE CATEGORY #1 - CUSTOMER SERVICE AND BUSINESS OPERATIONS		
REF	2012-13 PRE-EXISTING INITIATIVES	STATUS
1.1	Integrated Regional Water Management Planning (IRWMP)	Ongoing  
1.2	Conservation	Complete  
1.3	Electronic Billing System	Complete   
1.4	Emergency Response Plan Update	Complete  
1.5	Workplace Safety Program Update	Complete  
1.6	Drought and Water Shortage Contingency Plan	Complete  
1.7	Vendor Management	Complete  
1.8	Technology Improvement and Integration	Complete  
1.9	Alternative Revenue Sources	Ongoing  
1.10	Introduction of Lifeline Discount Program	Deferred
1.11	Tiered Rate Updated	Complete   
REF	2013-14 PRE-EXISTING INITIATIVES	STATUS
1.12	Community Demonstration Garden Outreach	Ongoing  
1.13	Salt and Nutrient Management Plan Scoping	Complete   
1.14	Asset Management Implementation Plan and Pilot Study of the Recycled Water System - Phase I	Complete  
1.15	Coordinated Energy Management	Underway   
REF	2014-15 AND 2015-16 PRE-EXISTING INITIATIVES	STATUS
1.16	Drought Supply and Demand Model	Ongoing  
1.17	Groundwater Management Plan Update	Complete   
1.18	Water Supply Management Plan Update	Complete   
1.19	Urban Water Management Plan Update	Complete   
1.20	Drought Outreach Plan	Ongoing  
1.21	Sustainable Groundwater Management Act Implementation	Ongoing  
1.22	Groundwater Model	Complete   
1.23	Agricultural Water Efficiency Action Plan	Underway   
1.24	Conservation Incentive Programs	Ongoing   
SERVICE CATEGORY #2 - ADMINISTRATION BUILDINGS AND FLEET MANAGEMENT		
REF	2012-13 PRE-EXISTING INITIATIVES	STATUS
2.1	Community Demonstration Garden Restoration and Enhancement	Complete   
2.2	Renewable Energy (Solar) Feasibility and Permitting	Ongoing   
2.3	Green Business Certification	Deferred   
2.4	Building Envelope Improvements	Ongoing   
2.5	Fleet and Construction Equipment Replacement Program	Ongoing  
2.6	Field Operations	Ongoing  
2.7	Fleet Replacement Study	Complete  
REF	2013-14 PRE-EXISTING INITIATIVES	STATUS
2.8	Edible Garden Project	Complete  

2.9	Lighting Upgrades at Administrative HQ – Phase I	Complete   
2.10	Solar Trellis System at Administrative HQ – Phase I	Deferred  
2.11	Stormwater Runoff Improvements Study	Complete  
<b>REF</b>	<b>2014-15 AND 2015-16 PRE-EXISTING INITIATIVES</b>	<b>STATUS</b>
2.12	Leaking Underground Fuel Tank (LUFT) Closure	Complete  
2.13	Stormwater Headquarters Improvements/Master Plan (Phase I)	Underway  
2.14	Board Room Remodel	Complete  
2.15	Recycled Water Hauling Program	Ongoing  

### SERVICE CATEGORY #3 - WATER SUPPLY AND SYSTEM INVESTMENT

REF	2012-13 PRE-EXISTING INITIATIVES	STATUS
3.1	Hydroelectric Generator Installations	Complete  
3.2	Recycled Water System Booster Station Electrical Upgrades	Complete  
3.3	San Ricardo Well Rehabilitation	Complete  
3.4	WTP Sustainable Wastewater Disposal and Irrigation Study	Complete  
3.5	Grant Application Readiness	Ongoing   
3.6	Goleta Beach Recycled Waterline Relocation	Planning  
3.7	Infrastructure Improvement Program Evaluation Criteria	Complete   
3.8	Corrosion Protection Program	Ongoing  
3.9	Neighborhood Compatibility of District Facilities	Ongoing  
3.10	Meter Replacement Program	Ongoing  
<b>REF</b>	<b>2013-14 PRE-EXISTING INITIATIVES</b>	<b>STATUS</b>
3.11	San Ricardo Well Site Enhancement	Complete  
3.12	Arc Flash and Electrical Upgrades	Complete   
3.13	Water System Evaluation and Submetering Program – Phase I	Complete  
3.14	Van Horne Reservoir Slope Protection Evaluation	Complete  
3.15	Corona Del Mar WTP Infrastructure Improvement Construction	Underway   
3.16	Hydroelectric Turbine Installation at Patterson Reservoir	Deferred  
3.17	Goleta Water District – City of Santa Barbara Interconnect	Deferred   
<b>REF</b>	<b>2014-15 AND 2015-16 PRE-EXISTING INITIATIVES</b>	<b>STATUS</b>
3.18	San Antonio Well Rehabilitation Project	Complete  
3.19	Berkeley Well Rehabilitation Project	Complete  
3.20	Shirrell Well Rehabilitation Project	Complete  
3.21	Oak Grove Well #2 Rehabilitation Project	Deferred  
3.22	SB Corporation Well Rehabilitation Project	Deferred  
3.23	Hollister Recycled Water Pump Replacement	Complete  
3.24	Emergency Pump Project (Patterson and Edison)	Underway  
3.25	Airport Area New Well Project	Deferred  
3.26	Transmission Main Area New Well Project	Deferred  
3.27	Monitoring Wells	Planning  
3.28	Injection Wells	Planning  



## LOOKING AHEAD

The Sustainability Plan is a living document, and its ability to remain adaptable and adjustable is important as the future of District water supplies is impacted by externalities such as drought conditions, State and Federal regulatory changes, and climate change. As illustrated throughout this Sustainability Progress Report, the District is making significant efforts to preserve natural resources and engage the community while maximizing financial performance to keep costs low for customers. This is particularly important during periods when environmental conditions are stressed, and the District must strategically adapt to major changes in its water supply portfolio and customer demand.

Ongoing monitoring of the progress of these initiatives will continue so the District can effectively adjust its approach as needed, and report on Sustainability Plan implementation results and benefits to the community. Through continued strategic planning, investments and implementation of best practices, the District will continue to foster a model operation for sustainable service today and well into the future.





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