Sustainability Plan:
A Service Delivery Strategy for the Goleta Water District

June 2012

GOLETA WATER 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.

Cover photos in order of appearance:
District Administrative Building; Corona Del Mar Water Treatment Plant; Van Horne Reservoir; Lake Cachuma

Acknowledgements

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Introduction

Sustainability Plan Overview

Sustainability is commonly defined as the responsible management of economic, environmental and social resources to meet the needs of present and future generations (see Figure 1). Fostering and maintaining a sustainable service delivery model that balances economic, environmental and social principles is a fundamental component of fulfilling the Goleta Water District's (District) mission to its customers and its role as a public water utility.

Goleta Water 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.

The District has developed this Sustainability Plan (Plan) to illustrate how sustainability has been and will continue to be built into the water service provided to customers. The Plan unites past, current and future efforts under a common document, emphasizing the role of sustainability throughout the District's activities. As detailed throughout the document, this thematic approach offers a host of inter-generational benefits to customers and the greater community, while reinforcing the District's leadership role among local public agencies.

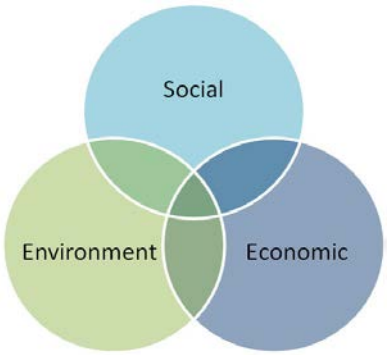


Figure 1. Sustainability Diagram, illustrating the three traditional resource management categories of sustainability.

The Plan establishes three guiding principles to define how the three sustainability categories (i.e., economic, environment and social) are interpreted by the District as they relate to public water utility service delivery and resource management strategy. The principles will be implemented through everyday operations as well as initiatives identified annually in coordination with the District Annual Budget and Infrastructure Improvement Plan (IIP). The benefits associated with embedding sustainability into the District's delivery of service to customers are multifaceted and include:

- Lower operational costs and enhanced revenue opportunities.
- Proactive risk mitigation through greater energy independence, enhanced emergency preparedness and employee training.
- Enhanced resource stewardship, preservation and security.
- Healthy and active public engagement aligned with established community values.

This Plan places the District on a course to maximize economic performance and minimize natural resource impact, while upholding community values. This will be achieved through implementation of several initiatives which are underway at the District and described in this Plan. Annual performance evaluation and reporting of these initiatives will provide customers and the broader community with documentation of the District's results. Given the unique and evolving nature of the District's service delivery environment, the Plan is adaptable and designed to adjust to changing conditions and new information, as necessary and appropriate.

Plan Organization

This Plan was developed based upon extensive literature review and identification of public agency best practices, as well as an assessment of the District's current service delivery practices, assets and operations. The Plan is organized into four sections:

- ***Introduction*** provides background and context on the intent of the Plan as well as the purpose and benefits of integrating sustainability considerations into the District's everyday operations and long-term resource management strategy.
- ***Background*** discusses early District leadership in sustainability, and provides examples of notable past investments. This section also provides background information on the District's assets, operations and resource use; examines sustainability from economic, environmental and social perspectives; and demonstrates the benefits of fully integrating sustainability into District service delivery model and resource management strategy.
- ***The Sustainability Blueprint*** proposes three guiding principles to align the traditional categories of sustainability with District responsibilities as a public water utility. This section also lists 28 planned initiatives that contribute to a sustainable operation. The initiatives are 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

  The initiatives included will be consistent with the current or future District Finance Plan, Budget and Infrastructure Improvement Plan.
- ***Next Steps*** discusses development of a data tracking and reporting program to monitor progress in meeting goals and report on outcomes annually. An overview of the Plan and implementation timeline is also provided.

Without question, the District already has the foundation in place that is needed to carry forward this Plan. As a business tool, the Sustainability Plan unites existing efforts, such as the District Budget and Infrastructure Improvement Plan, under a common framework, producing a coordinated strategy for serving the community now and into the future. Table 1, on the following page, provides a summary of the initiatives listed in the Sustainability Plan, demonstrating how planned District efforts integrate sustainability into the day-to-day work of the District.

Sustainability Plan Initiatives

Ref.	Initiative	Origin			Targeted Completion Date
		Budget	IIP*	Ongoing Practices	
Customer Service and Business Operations					
1.1	Integrated Regional Water Management Planning	✓		✓	Present - July 2013
1.2	Conservation	✓		✓	October 2012
1.3	Electronic Billing System	✓		✓	November 2012
1.4	Emergency Response Plan Update	✓		✓	January 2013
1.5	Injury and Illness Prevention Plan (IIPP) Update	✓		✓	March 2013
1.6	Drought and Water Shortage Contingency Plan	✓		✓	May 2013
1.7	Vendor Management			✓	June 2013
1.8	Technology Improvement and Integration	✓	✓	✓	June 2014
1.9	Alternative Revenue Sources			✓	Ongoing
1.10	Introduction of a Lifeline Discount Program	✓		✓	TBD
1.11	Tiered Rate Update	✓		✓	TBD
Administration Buildings and Fleet Management					
2.1	Community Demonstration Garden Restoration and Enhancement	✓		✓	September 2012
2.2	Renewable Energy (Solar) Feasibility and Permitting	✓	✓	✓	August 2013
2.3	Green Business Certification			✓	2015
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	✓	✓	✓	TBD
Water Supply, Treatment and Distribution System Investment					
3.1	Hydroelectric Generator Installations		✓	✓	September 2012
3.2	Recycled Water System Booster Station Electrical Upgrades		✓	✓	November 2012
3.3	San Ricardo Well Rehabilitation		✓	✓	March 2013
3.4	Water Treatment Plant Sustainable Wastewater Disposal and Irrigation	✓	✓	✓	March 2013
3.5	Grant Application Readiness			✓	June 2013
3.6	Goleta Beach Recycled Waterline Relocation		✓	✓	November 2013
3.7	Infrastructure Improvement Program Evaluation Criteria		✓	✓	January 2014
3.8	Corrosion Protection Program		✓	✓	Ongoing
3.9	Neighborhood Compatibility of District Facilities	✓		✓	Ongoing
3.10	Meter Replacement Program		✓	✓	Ongoing

Table 1: Sustainability Plan Initiatives

*Infrastructure Improvement Plan

Background: Goleta Water District

An Early Leader in Sustainability

The District spans approximately 29,000 acres (45 square miles) on the South Coast of Santa Barbara County and manages a complex set of water supply, treatment and distribution systems to provide water to more than 87,000 people. Customer categories are diverse and include residential, commercial, agricultural and institutional sectors. In delivering service to this unique area, the District's past actions have demonstrated leadership in sustainability. Today, resource efficiency continues to be a fundamental element of system design, operations and agency management practices. A snapshot of notable past and current sustainability actions includes:

- **Gravity-fed Water System Design.** The District's system design considerably reduces our energy consumption. As an almost entirely "gravity fed" distribution system, the District uses the natural slope of the mountains and coastal shelf to energize a complex system that moves water from supply sources to customers. This enables the District to avoid high energy and power costs, as well as infrastructure investments such as pumping stations that would otherwise be needed to generate pressure throughout the water system. Harnessing this natural power remains a key consideration for future infrastructure investments.

LEED Certified Buildings
Newly constructed and renovated buildings maximize comfort, cost-effectiveness, and resource preservation by meeting Leadership in Energy and Environmental Design (LEED) standards for Green Building design. The District's recently renovated Corona Del Mar Water Treatment Plant achieved LEED Gold certification in January 2010.

- **Early Water Conservation Leader.** The District was an early installer of water meters to increase water delivery efficiency, with water conservation efforts during the 1970s and 1980s gaining national recognition. GWD was featured as a case study by the U.S. EPA for its early leadership in strategic water conservation programs (*Cases in Water Conservation: How Efficiency Programs Help Water Utilities Save Water and Avoid Costs*, July 2002). Noteworthy efforts have included the installation of high-efficiency toilets and showerheads for District customers, and free onsite water surveys. The program resulted in 15,000 toilet rebates between 1987 and 1991, a 50% reduction in per-capita residential water use, a 30% reduction in total district water use and a 40% reduction in wastewater flow. Conservation activities remain a core District mission component.

- **Hydroelectric Turbines.** Some of the first renewable electricity generating turbines in the U.S. were installed in District reservoirs. This technology uses water flowing through District pipelines to activate turbines that generate energy that is used by the District and fed into the electrical grid. While a proven concept, new technologies are expanding the possibilities of using inline hydroelectric turbines for renewable energy generation throughout the District distribution system.

- **Green Business Program Sponsor.** The District is a sponsor of the Santa Barbara Green Business Program (GBP). The District assists businesses within its service area by conducting required water audits and completing the associated GBP checklist. The District is responsible for confirming whether certified green business participants have met the water conservation requirements of the program.

- **Community Demonstration Garden.** To help customers create beautiful, sustainable, water-wise gardens, the District provides living examples of resource efficient landscaping themes on the grounds of the Administration office. The plants in the garden are grouped according to water use in a series of "rooms," and irrigation systems – from low-profile sprinklers to drip systems – are utilized and demonstrated within the gardens. The garden debuted in 1999 and will be renewed and expanded in 2012 to include an "edible garden."

- **Water Resources Management.** The District implements sustainable water management practices in order to ensure the continued availability of water to support current and future generations of customers. Management of a significant recycled water system is complemented by a longtime aquifer storage and recovery program that makes conjunctive use of the ground water basin in dry years, followed by recharge through injection of spilling lake water in wet years. Such sustainable water management optimizes use of the water supply, helping to ensure balance between diverse demands for water resources.

- **Natural Sludge De-watering Process.** Removing water from sludge leftover from the organic filtration process in water treatment operations ("sludge dewatering") is commonly done mechanically with special equipment that requires tremendous energy consumption. The District, however, utilizes the natural alternative to mechanical equipment – the sun and air – in its sludge dewatering process, avoiding costly energy use while also allowing for groundwater recharge.

District Operations, Assets and Baseline Data

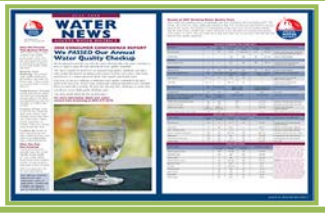
The District faces challenges and opportunities common to other water providers across California, the U.S. and around the globe. These include aging infrastructure, climate change impacts, increasing demand for resources, changing water supply and delivery costs, and an evolving workforce and customer base. An understanding of data surrounding District assets, resources and inputs provides context under which service delivery and long-term resource management occurs. This context is critical for crafting effective approaches to sustainable service delivery at the local level for District customers. Moreover, the snapshot of information below provides reference points against which progress towards meeting sustainability goals can be measured. For example, as described in additional detail later, initiatives to increase the use of renewable energy or optimize the energy efficiency of District buildings will result in decreased use of fossil fuel-based energy and electricity. Similarly, initiatives to invite customers to use electronic billing and payment may reduce customer trips to the District office and lower miles traveled in the community, thereby decreasing localized congestion and air quality impacts.

District Operations and Assets

Following is a summary of various District assets – from land and pipes to tractors and trash pumps – as well as operational statistics. This information is organized by District categories of service delivery to illuminate critical inputs and factors that are core components of operating a public water utility. Service delivery categories include: Customer Service and Business Practices; Administration Buildings and Fleet Management; and Water Supply, Treatment and Distribution System Investments.

Customer Service and Business Practices

- 16,600 customer service connections
- 10,000 annual customer office visits
- 75 vendors for services, supplies, and operational needs
- 60 Goleta Water District employees



Administration Buildings & Fleet Management

- 50,800 square feet of building space
- 57 acres of land owned by the District
- 37 fleet vehicles (sedans, pick-up trucks, utility trucks, etc.) travel 245,000 miles per year
- 19 pieces of heavy equipment (dump trucks, tractors, generators, etc.)
- Hundreds of pieces of light equipment (mobile radios, respirators, trash pumps, etc.)

Water Supply, Treatment and Distribution System Investment

- 4 primary water supply sources (Lake Cachuma, Groundwater, State Water Project, Recycled water)
- Surface water treatment facility with throughput capacity of 24 million gallons per day
- 270 miles of pipeline, 125 miles of which is steel piping
- 1,400 fire hydrants
- 6,000 pipe isolation valves
- 8 storage tanks which hold 20 million gallons at capacity
- 5 active production/injection wells, 4 inactive wells, 1 standby well
- 9 pump stations; 23 pumps
- 16,600 meters

Baseline Data: Resource Inputs and Consumption

Baseline data illustrates current resource use and potential areas for improvement. Fossil fuel-based energy use is one of the primary contributors to Greenhouse Gas (GHG) emissions, and the District recognizes that the most practical way to mitigate adverse environmental impacts while lowering operational costs is to reduce traditional energy use. The following graphs reflect the two most recent years of available data for the District's use of natural gas, electricity and water. It is noteworthy that the 60% reduction in electricity use reflected in Figure 2 is wholly attributable to the operation of District wells during the months of February through September of 2009. This data demonstrates the potential benefits of renewable energy generation by the District to offset the costs of using traditional energy sources while providing reliable water service to customers. Through implementation of initiatives identified later in the Plan, the District will strive to maintain the general downward trend in usage patterns illustrated in Figures 2, 3 and 4.

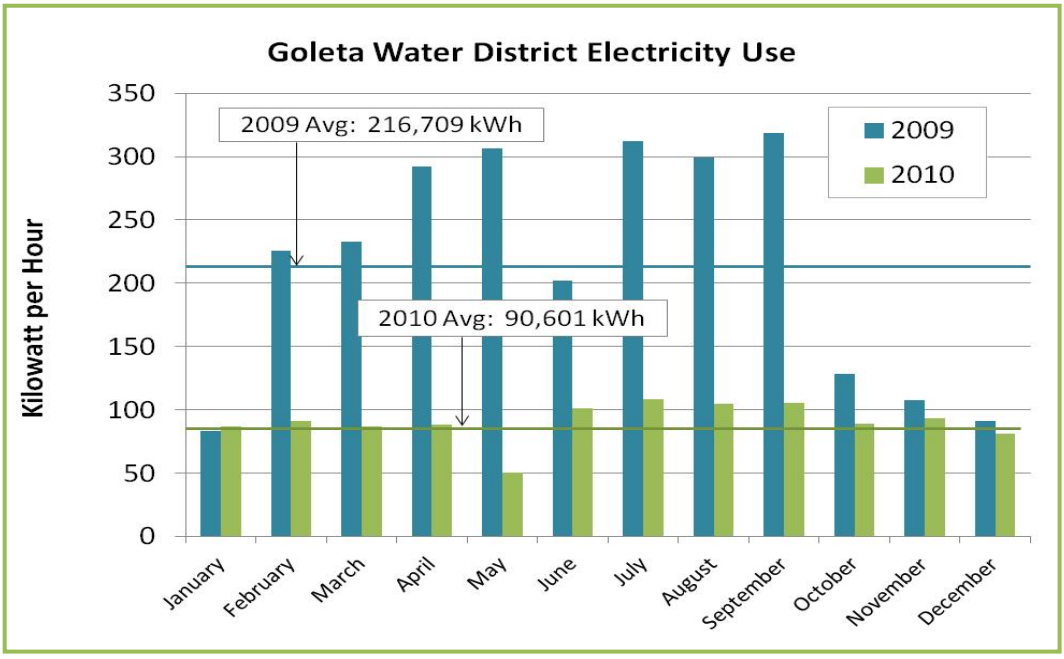


Figure 2: District Electricity Use, 2009 and 2010

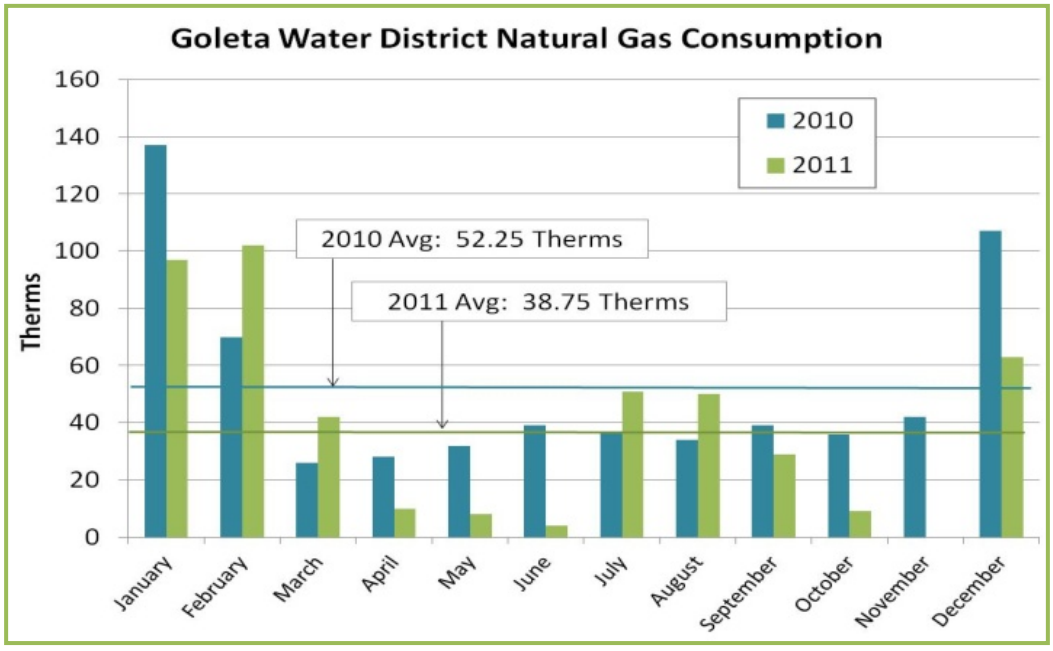


Figure 3. District Natural Gas Use, 2010 and 2011

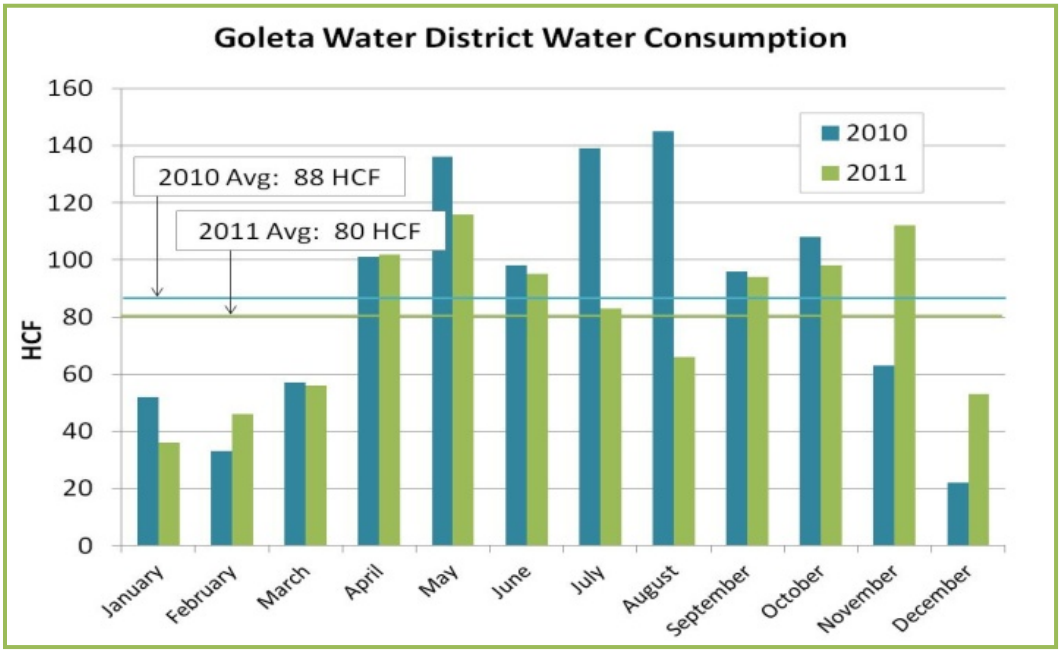


Figure 4. District Water Use, 2010 and 2011

Another major resource input for the District is fuel used to power the various fleet vehicles and equipment in everyday operations and construction projects. The District used ***16,155 gallons of unleaded*** and ***1,881 gallons of diesel gasoline*** in 2011, and 15,495 gallons of unleaded and 1,983 gallons of diesel gasoline in 2010, placing the fuel supplier among the top five of the District's supply vendors.

Given the expansive list of vendors providing service to the District, opportunities for improving sustainability will be sought through the District's direct actions to optimize routes and review alternative fuel investment options, as well as vendor selection and improved supply chain performance. Research demonstrates that procurement can be a critical tool for driving environmental and social standards.[1]

Supplier	Headquarters Location	Product
Thatcher Chemical	Salt Lake City, UT	Chemicals and filtering materials
Famcon Pipe & Supply Co.	St. Thomas, US Virgin Islands	Pipes, valves and other supplies
JCI Jones Chemical	Sarasota, FL	Chemicals and filtering materials
DeWitt Petroleum	South El Monte, CA	Fuel
General Pump Co.	Minnesota	Pump products

Table 2: Top five District suppliers

Trends in Sustainability: Economic, Environmental and Social Context

Analysis of trends related to the management of economic, environmental and social resources shows that embedding sustainability into the District's approach for service delivery offers multiple benefits to customers and the District. These include:

- Economic Sustainability and Benefits – Lower District operational costs and enhanced revenue opportunities.
- Environmental Sustainability and Benefits – Enhanced resource stewardship, emergency preparedness and risk mitigation.
- Social Sustainability and Benefits – Healthy and active public engagement and alignment with community values.

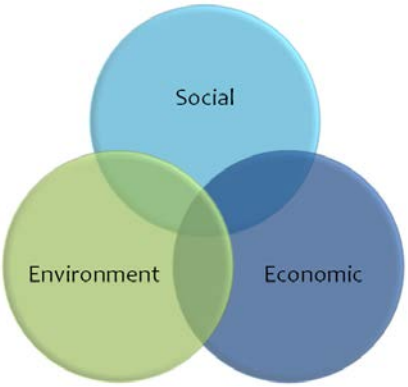


Figure 5. The Sustainability Diagram demonstrating the balance between environmental, economic and social norms is the recognized international symbol of sustainability.

Economic Sustainability

With the global population expected to reach nearly 10 billion in 2050, resource pressures on the planet are mounting.[2] This presents a tremendous challenge of balancing human consumption with environmental preservation; it also presents an opportunity for entities like the District to take meaningful local action. Recent studies show that sustainable business practices support not just the environment, but the economy, as well. For example, a study conducted by the Harvard Business School tracking the financial performance of 180 companies over an 18-year period found that the 90 firms implementing environmentally and socially responsible business practices performed significantly better than the 90 firms operating without sustainable policies, as illustrated in Figure 6. Sustainable business practice metrics used to rank companies included emission reduction policies, energy and water efficiency measures, and the use of environmental criteria in choosing suppliers.[3] From the perspective of a public water utility, the research provides insight into economic value creation and the premium that the market places on private firms with a focus on sustainability. These market dynamics could provide future benefits to public water utilities such as the District from a perspective of debt pricing, asset valuation and risk management.

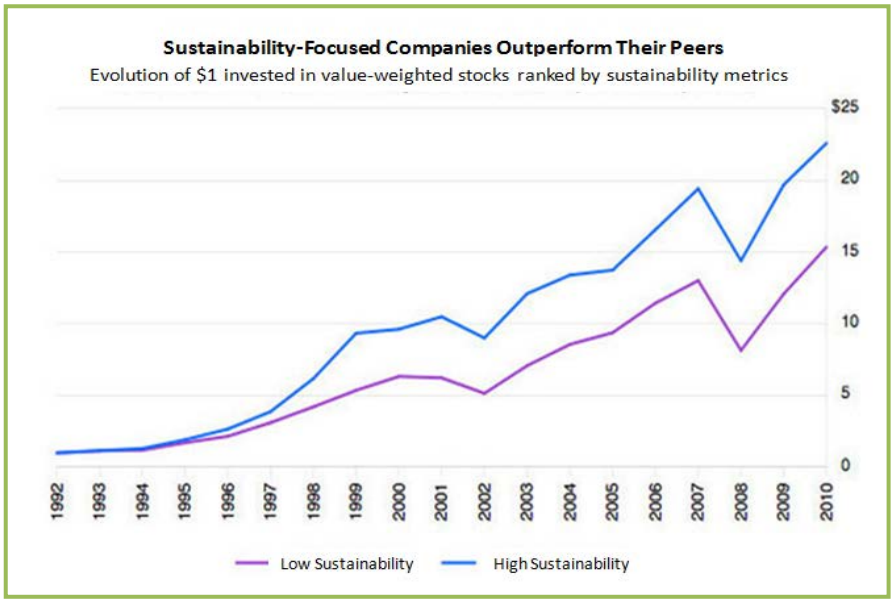


Figure 6. A Harvard Business School study showed that every dollar invested in a portfolio of sustainable companies (blue line) in 1993 would have grown to $22.60 by 2011, versus a rise to $15.40 for companies less focused on sustainability (purple line).

Similar to the rest of the nation, major components of the District's water system were designed and built in the mid-20th century and are aging. In general, expenditures and investments to improve and maintain the District's water system are expected to occur in an environment of increasing costs over time, due to scarcity and competition for materials, resources, and energy.

Accordingly, now is an optimal time to invest in infrastructure improvements. As has been seen with other public agencies and water providers, delaying necessary infrastructure investments could result in increased service disruptions, degraded water service

and increased unanticipated expenditures for emergency repairs.[4] Complimentary to investing in infrastructure improvements, an active preventative maintenance program provides a cost-effective strategy for enhancing and extending the useful life of existing infrastructure. This value-oriented approach to managing the District assets is critical for long-term business and economic sustainability, and is embodied in the District's 5-year Finance Plan, Infrastructure Improvement Plan, and annual Budget.

Finally, studies, articles and reports focusing on the benefits of supporting sustainability in the organization and workplace are published with increasing frequency in recognition of shifting best practices. The primary conclusion of this research is that incorporating sustainability into everyday operations, decision-making and policy development presents opportunities to reduce costs and inefficiencies, streamline operations, increase revenue and seek out new resources.[5]

Environmental Sustainability: Resource Stewardship, Emergency Preparedness and Risk Mitigation

The preservation and management of natural resources – principally, water supplies – is a foundational and core component of service delivery sustainability for the District. As a result, the District and other water providers are particularly vulnerable to environmental conditions and climate change, along with related regulations, that could affect water supplies. For example, according to the U.S. Environmental Protection Agency (EPA), coastal areas of the United States - such as Santa Barbara County - are likely to see multiple impacts of climate change.[6] This means that strategies to protect our local water resources and manage emergencies and risk associated with water supplies yield high benefits to the District and its customers.

Since impacts of climate change vary in different parts of the nation, adaptation strategies must be regionally appropriate and contextually reasonable. Accordingly, the first step to climate change adaptation and ongoing sustainability of a safe, reliable water supply is understanding the local impacts of climate change. Examples of the ways in which specific elements of climate change and variability may affect the District, its customers and its water supply are discussed below.

A Changing Climate

With mild temperatures and moderate rainfall, Santa Barbara County residents enjoy pleasant weather conditions year-round. Average temperatures range from the mid-50s to the mid-70s, and it's difficult to imagine the effects a changing climate will have locally. Regardless of the cause, global warming could have significant impacts on water resources and how they are managed. In Goleta, average temperatures are expected to increase 3.4 degrees Fahrenheit under a low emissions scenario, and 5.5 degrees Fahrenheit under a high emissions scenario over a 70-year period, as illustrated in Figure 7.[7] These numbers are not insignificant. The impacts that this level of temperature increase could have on our water resources could include:[8]

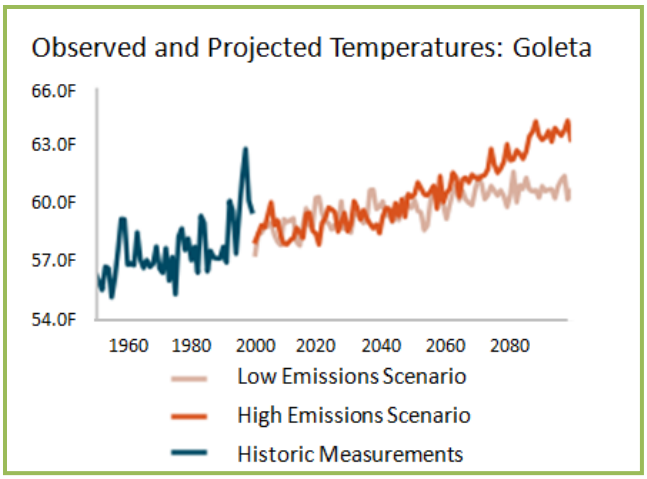


Figure 7. Observed and projected changes in annual average temperatures in the Goleta area, produced by the CalAdapt online tool utilizing four different climate models. "Low emissions scenario" characterizes a world with high economic growth and global population that peaks by mid-century and then declines. "High emissions scenario" projects continuous population growth and uneven economic and technological growth.

- Water losses through evaporation from standing water and soil, such as surface reservoirs and land cover surfaces. Water loss from irrigated land will directly affect the agriculture industry – an important customer base of the District – with the potential for increased observance of pests and diseases, and possible reduction in the overall quality and quantity of the agricultural products.[9]
- Increased customer water use, putting stress on water infrastructure and supply.

- Increased wildfire potential attributable to earlier onset of summer dryness that lasts longer and becomes more intense. With a significant portion of the county – including land within District boundaries – occupied by forest land, an increase in the frequency of wildfires could have serious implications locally, including threats to downstream water quality and loss of reservoir storage capacity due to sedimentation.
- Faster snowmelt feeding the Santa Ynez River and the State Water Project will lead to earlier outflows, making it more difficult to store water and resulting in a decline in flows during the typically dry April to July period.

Sea Level Rise

Higher air and water temperatures are expected to contribute to the rising sea level in the form of melting mountain glaciers and small ice caps, as well as the massive Greenland and Antarctic ice sheets.[10] While the effects of sea level rise are most noticeable along the Atlantic and Gulf coasts, the west coast has also seen a rise in sea level, particularly in the San Francisco Bay area, as illustrated in Figure 8. This trend is expected to continue. In Santa Barbara County alone, one model predicts that an estimated 6,570 acres of land could be vulnerable to a 100-year flood event due to sea level rise in 2100, representing a 36% increase in vulnerable acreage from 2000 levels.[11] Other local impacts from sea level rise may include:

- Erosion of wetlands, weakening their critical role as a natural water filtration system.
- Increased salinity of both surface water and ground water through salt water intrusion, affecting water quality.
- In the San Francisco Bay / Sacramento Delta (Bay Delta) area, sea level rise will push salty water upstream, causing existing water intakes to draw on salty water during dry periods. This will affect the State Water Project, which is a source of supply for the District.
- Increased potential for levee failures in the Delta, which can damage infrastructure and interrupt State water supplies.

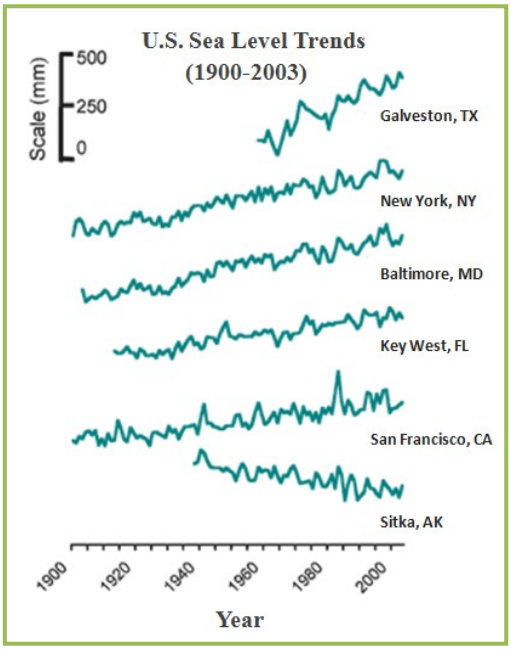


Figure 8. Sea level trends, 1900-2003. Source: Proudman Oceanographic Laboratory's Permanent Service for Mean Sea Level (PSMSL), as found on the EPA Climate Change Website.

State Water Project Uncertainty

The effects of climate change also exacerbate the already uncertain nature of State water availability. State water accounts for approximately 23% of the District's water supply planning portfolio, but the actual amount delivered to and utilized by the District varies from year to year based on customer demand and weather. For example, in periods of drought, the District may be dependent on State water to supplement local supply due to high customer demand. Consequently, the impacts of climate change on the State's water supply are closely monitored as these could have potential implications locally. Figure 9 provides a snapshot of the ways in which climate change will affect watersheds.

Related and in addition to potential climate change impacts, the District is regulated by State and federal agencies responsible for enhancing and preserving the environment. In this context, the District is required to maintain compliance with rules related to topics such as species and habitat preservation, while managing water supplies and operations for customers. Over the long-term, the potential for regulatory impacts and climate change add uncertainty to the already difficult task of water resource planning and management. Unpredictable conditions can adversely affect water supply and infrastructure assets, and makes planning for and investing in these assets more expensive and risky. Ongoing monitoring of environmental conditions and early identification of adaptation strategies helps the District mitigate potential risks.[12] This kind of effective planning and proactive strategies,

including the 28 initiatives listed in this Plan, will help prevent excessive impacts such as cost increases or water reliability problems for customers in the future.

Social Sustainability

The third component of sustainability, "social sustainability," establishes the concept that future generations should have the same or greater access to community resources, such as public health and well-being, as current generations. As a provider of a lifeline resource, the District plays an essential role in maintaining a functional community. In fact, our local community cannot exist without the District successfully balancing its resources to ensure the continuous delivery of clean, safe drinking water.

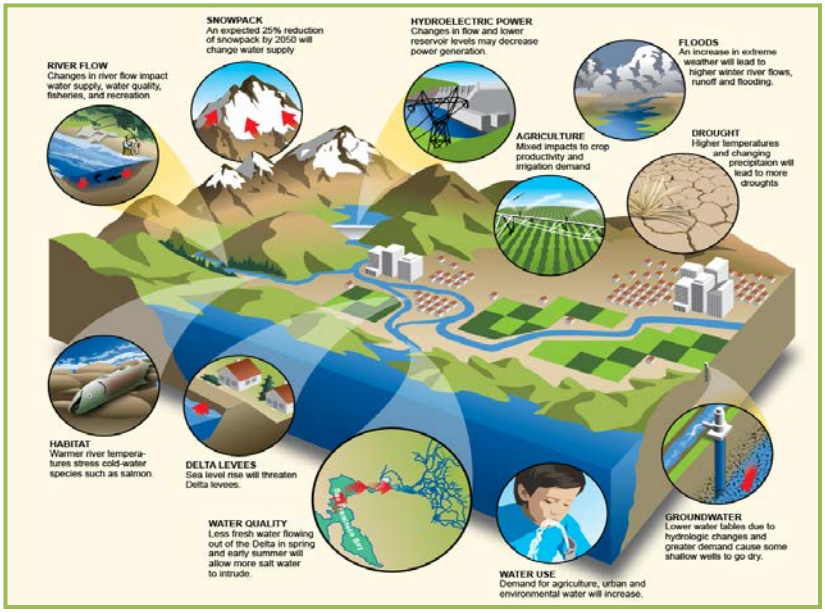


Figure 9. How climate change affects a watershed, produced by the CA Department of Water Resources.

Many of the initiatives discussed in this Plan are expected to deliver social benefits. The District's planned implementation of an electronic billing system (e-Billing), for example, will result in increased community well-being and productivity due to an anticipated reduction in the number of customer office visits. Reduced office visits result in lower carbon emissions, less traffic on local streets and freeing up of customer time for other productive activities in the community and at home. Implementation of a robust e-billing system will also meet the long expressed customer desire for the convenience of paperless billing and automatic payment. Easier customer access to water use information and comparison data helps consumers stay informed and make decisions about consumption, conservation and opportunities to save money. This initiative is directly in line with current best practices research. As Starbucks CEO Howard Shultz recently noted, customers want the businesses they support to share their values.[13] The District believes that customers have similar expectations of the public utilities that serve them.

In addition to specific initiatives contained herein, many of the District's ongoing activities and business practices support social values related to community livelihood and public health. For example, the District is responsible for and directly involved in ensuring public safety and emergency preparedness by maintaining the functionality of the community fire suppression system (i.e., fire hydrants). This is accomplished through infrastructure investments and collaborative relationships with community partners, such as the City and County Fire Departments. Furthermore, by producing a product that people ingest, the District is vitally connected and committed to supporting public health by ensuring a safe drinking water supply.

Research demonstrates that an approach to service delivery that emphasizes organizational transparency, civic participation and the fostering of public health by public and private organizations supports overall community well-being.[14] Similarly, in a recent survey of "millennials" (people born after 1981) and organizational leaders, 92% and 71%, respectively, say that the success of businesses and organizations should be measured by more than just profit. These success indicators include innovation, livelihood and societal development.[15] Given the strong environmental heritage of southern Santa Barbara County and the Goleta Valley, this view is likely shared by District customers across demographic categories. As a public agency, this information provides a reference point for the District regarding how to serve its current and future customers most appropriately. In other words, since customers support and increasingly expect organizations to balance financial performance with social standards of performance, an opportunity exists for the District to proactively meet and exceed these expectations.

The Sustainability Blueprint

Within this context of economic, environmental and social trends and benefits, the District is holistically integrating sustainability into everyday operations, service delivery and long-term resource management. The "Sustainability Blueprint" illustrates how sustainability is built into the water service provided to customers. It merges theoretical concepts with practical on-the-ground initiatives and actions by:

- Outlining three Sustainability Guiding Principles, and
- Listing and describing 28 initiatives that the District is already pursuing.

Sustainability Guiding Principles

As demonstrated in Figure 10, the District's mission is rooted in principles of sustainability. Maintaining a sustainable service delivery model that balances economic, environmental and social principles to provide service is a fundamental component of fulfilling the Goleta Water District (District) role as a public water utility and upholding the District's mission for customers. Accordingly, three Guiding Principles (Principles) that embrace the three components of sustainability – economic, environment and social – illustrate how these concepts relate to District service delivery. Furthermore, the principles provide a basis for evaluating and prioritizing initiatives undertaken by the District.

- **Economic Principle: Enhanced value creation 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. In doing so, strategic infrastructure investments, cost-effective business operations and water supply management will help ensure the highest level of reliable service for District customers.

- **Environment Principle: Resource stewardship, independence and emergency preparedness**
  The District will understand the resources it uses and manages. This will position the District for greater independence and emergency preparedness by mitigating reliance on uncontrollable inputs including electricity, natural gas and gasoline. Additionally, sustainability actions will help the District plan for and adapt to impacts related to climate change, weather variability, and regulations on water suppliers.

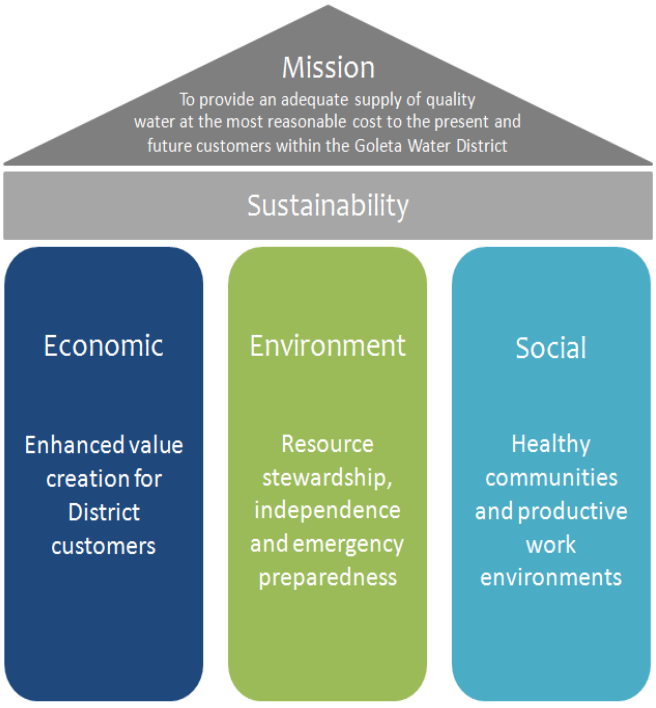


Figure 10. Sustainability Guiding Principles

- **Social Principle: Healthy communities and productive work environments**
  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.

Initiatives

The 28 initiatives listed in this Plan promote the outcomes and benefits that are described by the Sustainability Guiding Principles. Initiatives have been selected based upon identification of best practices, literature review, and an assessment of the District's current service delivery practices, operations and assets. A strong emphasis has been placed on making infrastructure and programmatic investments that uphold water supply reliability and improve or extend the life of District infrastructure.

Initiatives are organized by District categories of service delivery to highlight critical inputs and factors that are core components of operating a public water utility. Service delivery categories include:

- Customer Service and Business Operations
- Administration Buildings and Fleet Management
- Water Supply, Treatment and Distribution System Investment

Moving forward, specific initiatives will be identified annually in coordination with preparation of the District Budget and Infrastructure Improvement Plan. Initiatives are prioritized to complete the most cost-effective actions with highest potential benefits first. Goals and targeted completion dates are identified for each initiative, which provides a baseline for performance monitoring. Consistent with the adaptive management approach embodied in this document, efforts in meeting initiative goals and targets will be tracked and reported on annually for performance or redesign.

Figure 11 shows how the District's initiatives can be organized by service delivery categories, related to the District's mission, and described according to their contribution towards a sustainable operation. Ultimately, initiatives (represented with a "star" in Figure 11) are placed on the sustainability diagram to illustrate their relative alignment with the major sustainability concepts. Placement of the initiatives on the sustainability diagram also demonstrates how District resources are being invested to deliver the benefits and outcomes described in the Guiding Principles.

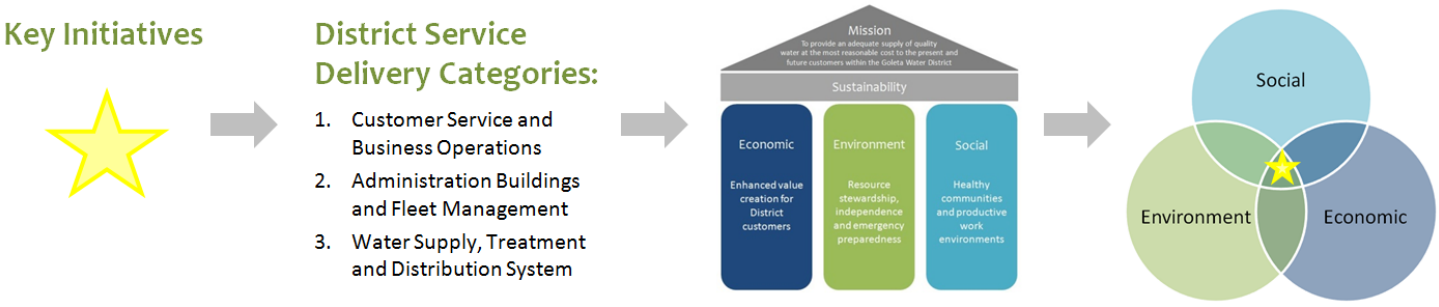


Figure 11.

Determining the Alignment of Sustainability Initiatives

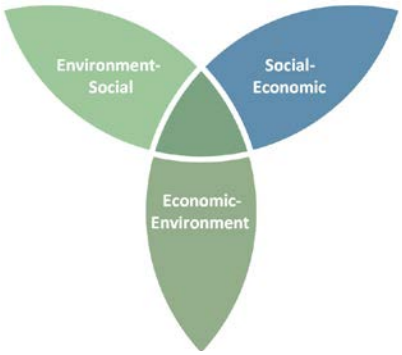


Figure 12. Clover-shaped intersection of the three categories of sustainability

Figure 12 is an illustration of the clover-shaped portion of the sustainability diagram, representing the intersection of the economic, environment and social categories of sustainability. Positioning of initiatives within the diagram is based on a qualitative analysis that reviews components of a project, and identifies the expected outcomes and benefits. The initiatives are assessed using evaluative questions as a tool to gauge how strongly they correlate with the economic, environment and social categories of sustainability. The call-out box below provides an example of this process for one project.

Below are examples of questions that were analyzed for each initiative:

Economic Sustainability

1. Does it reduce operational costs?
2. Does it prevent maintenance, repairs, or emergency responses due to infrastructure failures?
3. Does it add value for customers (financial and/or water supply reliability)?
4. Does it produce revenue?

Environmental Sustainability

1. Does it reduce negative impacts to the environment?
2. Does it promote greater independence and emergency preparedness?
3. Does it improve resource security by reducing reliance on business inputs and resources?

Social Sustainability

1. Does it enhance civic engagement and transparency in District actions?
2. Does it enhance community health and well-being?
3. Does it physically benefit the community?
4. Does is support employee safety and well-being?

Sustainability Alignment Example:
Placing initiatives within the clover-shaped diagram:

Initiative 1.3: Electronic Billing System
Anticipated outcomes and benefits:

- Increased administrative efficiencies ***(Economic)***
- Reduced paper use ***(Environment)***
- Reduced customer trips to the office which frees up customer time for other activities ***(Social)***

Outcomes offer results in each category (economic, environment and social), therefore, initiative 1.3 falls in the center of the diagram.

The following pages provide a summary of the specific initiatives the District will undertake during the first year of implementation of this Sustainability Plan. Most of the 28 initiatives will be initiated during the 2012-2013 Fiscal Year; however, the completion targets identified do not necessarily fall within this same time period. Many initiatives are ongoing, while others may take several years to complete. As discussed, progress in meeting initiative goals consistent with the guiding principles will be assessed and reported on annually.

Service Delivery Category #1
Customer Service and Business Operations

By embedding sustainability considerations into administrative policies, the District will see measurable results in areas such as safety, well-being and productivity of the workforce, as well as customer relations. Investments in this service delivery category will be focused on management practices, risk mitigation, information technology and personnel development to guide day-to-day decision-making. The District also has an obligation to share its successes and lessons learned with other stakeholders and the community through public outreach and interagency relationships. Such public outreach, stakeholder engagement and policy activities will ensure the District upholds its responsibilities to improve community-wide understanding of best practices.

Case Study:
Sonoma County Water Agency

The Agency has three solar photovoltaic (PV) systems integrated into its operations to offset its electricity consumption. Located at the administration building and two wastewater treatment plants, the systems generate a combined total of 2.8 MW of solar electricity, saving the Agency an estimated $2.3 million in operational costs over the life of the systems

Examples of some of the potential reportable outcomes from implementation of the initiatives in this area include:

1. Workforce safety
2. Minimized use of hazardous and toxic materials in the workplace
3. Reduced fuel usage
4. Enhanced employee safety and well-being
5. Improved community education and public engagement
6. Decreased waste and/or increased waste diversion (recycled, composted, etc.)

- ***Initiative 1.1: Integrated Regional Water Management Planning***

Description: Demonstrating the importance of regional planning and coordination, the District will be actively involved in the planning process related to updating to the *Santa Barbara County Integrated Regional Water Management Plan* (IRWMP). District involvement will include participation on three special subcommittees: (1) Recycled Water Feasibility Study Subcommittee; (2) Climate Change Subcommittee; and (3) Project Selection, Goals, and Targets Subcommittee.

Anticipated outcomes and benefits: Active engagement in this process provides for a strategic opportunity to compete for and receive funding for programs and/or projects of regional benefit and ensure selected projects are aligned with District priorities. An additional benefit is that data and analysis developed and used as part of the IRWMP, such as climate change information, can be used by the District for future resource planning efforts, including the 2015 Urban Water Management Plan.

Goal	*Completion Target*
Maintain strategic District participation in regional efforts, including assisting with development of the IRWMP update and participating on three subcommittees, with the objective of securing funding for identified programs and/or projects.	Present – July 2013

- ***Initiative 1.2: Conservation***

Description: Compliance with the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU) is necessary to maintain eligibility for State grants including Proposition 84 IRWMP grants. Compliance with MOU provisions can be demonstrated through implementing conservation Best Management Practices (BMPs) or other approaches, including the use of the Gallons per Capita per Day (GPCD) approach. This initiative would analyze the District's activities to identify cost-effective conservation priorities that are locally effective and also meet the standards for maintaining eligibility for State funding, including Proposition 84 IRWMP grants. The resulting information will enable the District to update its Conservation Plan.

Anticipated outcomes and benefits: This effort will provide the District with a clear understanding of optimal local conservation measures, enabling the District prioritize its investments, maintain State grant eligibility, and assist customers' efforts to reduce water usage.

Goal	*Completion Target*
Identify optimal conservation plan and programming to help customers use water wisely and maintain District eligibility for State grants.	October, 2012

- ***Initiative 1.3: Electronic Billing System***

Description: A robust electronic billing (e-Billing) system will enable customers to receive and pay their GWD bills online, and have access to information about their account, outstanding balances and water use history. This state-of-the-art system will meet increasing customer demands for online billing and payment access while preserving traditional customer service delivery channels such as walk-in access to District staff, resulting in improved customer service.

Anticipated outcomes and benefits: Internally, e-Billing will strengthen the District billing systems and internal controls, while increasing staff productivity by eliminating certain billing-related manual activities. As an example, the District sees approximately 850 customer office visits per month, primarily for bill payment. E-Billing can potentially reduce the number of customer office visits, thereby reducing miles driven by customers (related to fuel-use, greenhouse gas emissions), and free up staff time for other administrative duties.

Goal	*Completion Target*
Implement e-Billing system and target 13-15% customer participation (3,000-4,000 customers) within first year of implementation.	November, 2012

- ***Initiative 1.4: Emergency Response Plan Update***

Description: Focusing on the environmental component of the District's sustainability guiding principles, this effort will review opportunities for energy security and independence in an emergency event through the preparation of a comprehensive update to the District Emergency Response Plan (ERP). The ERP will document all aspects of District emergency responses, such as financial, public relations, agency coordination, and operational activities, and will be designed in such a way that ensures the entire District staff understands the appropriate response in various emergency situations where a limited amount of personnel are able to respond.

Anticipated outcomes and benefits: This initiative will enhance District emergency preparedness by strengthening the ability to effectively respond to emergency situations, ensuring workforce safety, communication with the public and District customers, and uninterrupted service to customers.

Goal	*Completion Target*
Complete Emergency Response Plan Update	January, 2013

- ***Initiative 1.5: Injury and Illness Prevention Plan (IIPP) Update***

Description: Designed to create an organized approach to employee accident prevention, this project will align safety regulations and procedures with other District regulations already in place. The IIPP will provide the documentation, communication, training, and employee involvement necessary for an effective program, thereby reducing employee injuries and associated costs. This initiative will support a healthy work environment, consistent with the social component of the District's Sustainability Guiding Principles.

Anticipated outcomes and benefits: Updating the IIPP will ensure the health and safety of the District workforce, while reducing costs related to healthcare, workers' compensation rates, injuries and lost time from sick leave. During the 2010-2011 fiscal year, 6,900 sick leave hours due to illness, injury or family medical leave were utilized by District staff, totaling approximately $267,521 in associated costs.

Goal	*Completion Target*
Complete Injury and Illness Prevention Plan Update	March, 2013

- ***Initiative 1.6: Drought and Water Shortage Contingency Plan***

Description: Development of a Drought and Water Shortage Contingency Plan will clearly implement specific sections of the California Water Code (Sections 350-359), and add specificity to the foundation created by existing regulations, such as the SAFE Water Supplies Ordinance and various regulatory documents, which lay the groundwork for planning for and implementing actions to mitigate the impacts of a water shortage.

Anticipated outcomes and benefits: A Drought and Water Shortage Contingency Plan will enhance the District's emergency preparedness and response strategy in the case of a drought.

Goal	*Completion Target*
Complete a Drought and Water Shortage Contingency Plan	May, 2013

- ***Initiative 1.7: Vendor Management***

Description: Ensure that vendors contracted to supply goods and services meet the same sustainability standards as the District has established for itself. This will be accomplished through the establishment of sustainable procurement criteria and monitoring of vendors' sustainability information, such as business practices, product sourcing and social and environmental standards. Examples of vendors include janitorial service, landscaping services, copy/print services, and materials suppliers.

Anticipated outcomes and benefits: While continuing to hold vendors to cost and quality standards, adding environmental standards to the vendor review process will ensure District sustainability principles are upheld by its vendors, thus resulting in a sustainability ripple effect through the supply chain.

Goal	Completion Target
Establish sustainable procurement criteria	June, 2013

- ***Initiative 1.8: Technology Improvement and Integration***

Description: In their current state, the varying degrees of age, condition and functionality of the technology and software systems utilized by the District limit staff's ability to track and retrieve meaningful data in a timely and efficient manner. The District currently operates several technology platforms, which include:

- A financial and accounting system
- A Geographic Information System (GIS)
- A Customer Information System (CIS)
- A rudimentary asset management system
- A Supervisory Control and Data Acquisition (SCADA) system
- A Hydraulic Model

This initiative will involve assessing the technology and computer software programs currently utilized, and exploring options for improving and integrating systems. The District will benefit from added technology that enhances document and asset management solutions. As an example, an improved asset management system will allow the District to predict peaks in infrastructure failure rates, quantify the cost of deferred maintenance, and prepare long term financial strategies for addressing infrastructure needs.

Anticipated outcomes and benefits: Utilization of the latest technology will produce operational savings by allowing employees to work at a high rate of productivity and efficiency and minimize the hours of work needed for routine tasks. Moreover, asset management software will enable strategic infrastructure investment, averting leaks, breaks, and water losses. Maintenance of accurate facility records, billing and customer information within various computer systems are also of vital importance to the efficient operations of the District's water system and customer service.

Goal	Completion Target
Identification of specific solutions for improving and integrating technology and software systems	June 2014

- ***Initiative 1.9: Alternative Revenue Sources***

Description: The District will explore fiscal options to fund its initiatives, including federal and state grants, public-private partnerships, and revenue from renewable technology. Additional fund-raising options for consideration include:

- Customer contributions – Offer customers the opportunity to support the District's sustainable projects through voluntary donations, such as a "1% for the environment" donation provided with the monthly water payment.
- Employee contributions – similar to Customer donations, with voluntary paycheck deductions.
- Revenue from renewable energy projects (i.e., solar, hydroelectric)
- Revenue from recycled cans, glass bottles, etc.
- Grants: State Department of Water Resources, California Energy Commission, U.S. Bureau of Reclamation, U.S. Department of Energy

Anticipated outcomes and benefits: Seeking alternative revenue sources will offset costs to the District of pursuing and implementing planned initiatives.

Goal	Completion Target
Research, identify and pursue financing for sustainability plan initiatives	Ongoing

- ***Initiative 1.10: Introduction of a Lifeline Discount Program***

Description: Discounted rates can provide relief for qualifying households having difficulty paying water bills. This initiative will explore methods for offering discounted water service to customers who qualify for financial assistance.

Anticipated outcomes and benefits: A discount program will reduce customer financial burdens and reduce bill payment delinquencies.

Goal	Completion Target
Deliver rate discounts to economically disadvantaged customers.	TBD

- ***Initiative 1.11: Tiered Rate Update***

Description: Appropriately designed urban water rate structures enhance community awareness of conservation and offer incentives for prudent water use. This initiative will identify revenue-neutral rate structures that would continue to facilitate water conservation.

Anticipated outcomes and benefits: Tiered rates will encourage water conservation among customers.

Goal	Completion Target
Update tiered rates to drive water conservation	TBD

Sustainability Alignment of Customer Service and Business Operations Initiatives

As discussed, the clover-shaped diagram in Table 3 represents the intersection of the economic, environment and social categories of sustainability. Placement of each of the 11 initiatives in the *Customer Service and Business Operations* category on the diagram shows that investments are distributed relatively equally among the three categories of sustainability.

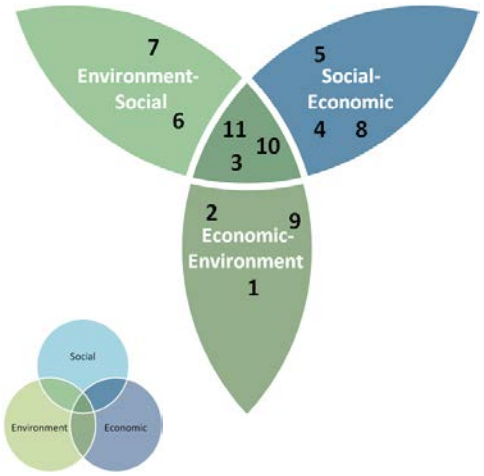
	Initiative	Sustainability Alignment
1	Integrated Regional Water Management Planning	
2	Conservation	
3	Electronic Billing System	
4	Emergency Response Plan Update	
5	Injury and Illness Prevention Plan Update	
6	Drought and Water Shortage Contingency Plan	
7	Vendor Management	
8	Technology Improvement and Integration	
9	Alternative Revenue Sources	
10	Introduction of a Lifeline Discount Program	
11	Tiered Rate Update	

Table 3. Alignment of service delivery category #1 initiatives within intersecting categories of sustainability.

Service Delivery Category #2
Administration Buildings and Fleet Management

Incorporating sustainability considerations in the management of administration facilities at the District headquarters and water treatment plant, as well as fleet management, can result in reduced energy usage, reduced operational costs and healthy workplaces. This can be accomplished through replacement of standard-engine fleet vehicles with gas-electric hybrids, performing building envelope retrofits and renewable energy installations, and installing water-wise landscaping at various District-owned properties.

Examples of some of the potential outcomes from implementation of the initiatives in this area include:

1. Reduced resource usage and costs
    a. Electricity
    b. Natural Gas
    c. Water
    d. Gasoline
2. Renewable energy generation and usage
3. Reduced greenhouse gas emissions
4. Increased waste diversion (recycled, composted, etc.)
5. Reduced operational costs
6. Revenue generation

Case Study:
San Diego County Water Authority

The Water Authority manages a fleet of over 90 vehicles, as well as heavy construction equipment. Recognizing the potential to reduce greenhouse emissions and operating costs, the Water Authority began implementing sustainable measures through the fleet several years ago. Using a systematic review process, vehicles were both eliminated and replaced with hybrids during prior budget cycles.

- ***Initiative 2.1: Community Demonstration Garden Restoration and Enhancement***

Description: Restore the community demonstration garden at the administration headquarters building, originally installed in 1999, to illustrate the various types and benefits of productive and sustainable gardens. The effort will include refurbishment of water-wise plants and enhancement of the gardens to include:

- Xeriscaping, a method of landscape design that emphasizes the use of native, drought-tolerant plants requiring little to no water for irrigation, as well as minimizing water loss through evaporation and run-off.
- Edible plants, such as herbs, edible flowers, fruits and vegetables.

Anticipated outcomes and benefits: Promote and encourage resource-efficient landscaping through public visits and tours of the demonstration gardens. Increased public outreach regarding the demonstration garden will increase awareness of this educational community resource.

Goal	*Completion Target*
Complete restoration and enhancement of the District demonstration gardens	September, 2012

- ***Initiative 2.2: Renewable Energy (Solar) Feasibility and Permitting***

Description: Explore opportunities for solar installations on District-owned properties such as the administration offices, the various reservoirs, and the Corona Del Mar Water Treatment Plant. Such installations could offset traditional energy use, while also providing resource independence and protection of District assets.

Anticipated outcomes and benefits: Offset traditional use of non-renewable energy resources, resulting in increased resource security and independence. For example, based on the District's 2010 electricity usage and associated costs, if solar installations offset District electricity use by 10% (9,060 kWh) this could result in operational cost savings of $20,000 per year.

Goal	*Completion Target*
Complete an initial study of renewable energy installation options	August 2013

- ***Initiative 2.3: Green Business Certification***

Description: Pursue certification as a "Green Business" through Green Business Santa Barbara County. While the District already implements many voluntary actions to protect, preserve and improve the environment beyond what current laws require, there are additional criteria included on an extensive list of actions required to qualify as a certified Green Business. Through certification, the Green Business Program will recognize the District as an organization that goes above and beyond required measures to serve as a model of sustainable operation.

Anticipated outcomes and benefits: In addition to the environment benefits resulting from this initiative, the District will reap the cost benefits of completing the required sustainability items such as reduced energy and water costs, and healthier, more comfortable workspaces, while also leveraging free promotion from the Green Business Program.

Goal	*Target*
Achieve certification as a Santa Barbara County Green Business	2015

- ***Initiative 2.4: Building Envelope Improvements***

Description: Strive to achieve energy efficiency in the administration headquarters building through retrofits that will help decrease energy use, improve employee comfort and reduce operational costs. Retrofits may include:

- Lighting, such as replacement of standard fluorescent lighting with light-emitting diode (LED) or low mercury florescent lighting, and installing automatic shut-off light switches and occupancy sensors in hallways, bathrooms and other common areas
- Heating Ventilation and Cooling (HVAC) System replacement with high efficiency model
- Insulation and sealing of outer walls, ceiling, windows, doors and floors to block heat loss in winter and heat gain in summer, and eliminate air leaks to minimize drafts
- Installation of facilities to support employee well-being, such as on-site showers and locker rooms

Anticipated outcomes and benefits: This initiative will help create healthy work environments for District employees while reducing operational costs. Performing energy efficiency building retrofits by addressing this "low-hanging fruit" typically results in energy savings of 10-20%, with simple payback from energy cost savings ranging anywhere from 4 months to 2 ½ years.[16]

Goal	*Completion Target*
Create healthy work environments while reducing energy use and operational costs	Ongoing

- ***Initiative 2.5: Fleet and Construction Equipment Replacement Program***

Description: This is an ongoing program that works to replace vehicles that are approximately 10-years old or have reached 100,000 miles of use. Using the results of the fleet study (Initiative 2.7), older model vehicles will be replaced with vehicles that demonstrate greater fuel efficiency and less emission production. Fleet vehicles and equipment that are used every day include large and small service trucks, dump trucks, and heavy equipment. In general, replacing aged vehicles and equipment ensures their continued dependability.

Anticipated outcomes and benefits: Vehicle and equipment replacement ultimately renders costs savings for the District, as repair and mainentance of existing aged vehicles and equipment generally costs more than replacement. Furthermore, down-time for repairs negatively affects productivity. There are also enviromental benefits to replacing older model vehicles with more fuel efficient vehicles due to the need to utilize less fuel.

Goal	*Completion Target*
Improve the sustainability of the District fleet and construction equipment	Ongoing

- ***Initiative 2.6: Field Operations***

Description: The District will continue to assess and adjust driving routes for various maintenance programs and meter reading, as well as incorporating additional field optimization methods, such as increased use of laptops and electronic devices in the field.

Anticipated outcomes and benefits: Optimizing field operations will reduce the need to update and utilize grid books in the field, and increase worker efficiency and productivity. Adjusting driving routes can reduce fuel costs and increase worker productivity by reducing driving time.

Goal	*Completion Target*
Identify optimal routes to minimize miles traveled, and expand use of electronic devices and technology in the field	Ongoing

- ***Initiative 2.7: Fleet Replacement Study***

Description: District fleet vehicles play a vital role in the safe, reliable and effective response to the water related issues of District customers, as well as routine maintenance operations and repairs. This initiative involves conducting a study to prioritize a replacement schedule for the District's vehicle fleet inventory. The study will include an assessment of the feasibility of replacing the standard-engine fleet with gas-electric hybrids, and vehicles that use conventional petroleum-based fuels with biofuel vehicles, as well as options for implementation.

Anticipated outcomes and benefits: Introducing hybrid vehicles into the district fleet could result in significant cost savings attributable to fuel. From an environmental preservation perspective, biofuels burn cleaner than gasoline, are non-toxic and fully biodegradable, while hybrids, electric vehicles and biofuel vehicles all produce fewer emissions than standard engine vehicles running on petroleum-based fuels.[17]

Goal	*Completion Target*
Complete study and identify opportunities for incorporating gas-electric hybrids and bio-fuel vehicles into District fleet	TBD

Sustainability Alignment of Administration Buildings and Fleet Management Initiatives

As discussed, the clover-shaped diagram in Table 4 represents the intersection of the economic, environment and social categories of sustainability. Placing each of the seven initiatives in the *Administration Buildings and Fleet Management* category on the diagram shows that the investments are primarily focused in the center and in the economic-environment area (intersection) of the diagram. This is due primarily to the cost-saving and revenue generating qualities exhibited by these projects.

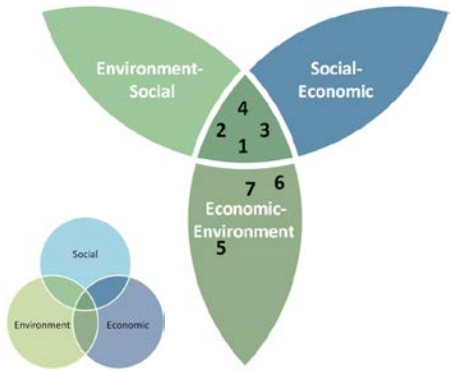
	Initiative	Sustainability Alignment
1	Community Demonstration Garden Restoration	
2	Renewable Energy (Solar) Feasibility and Permitting	
3	Green Business Certification	
4	Building Envelope Improvements	
5	Fleet and Construction Equipment Replacement	
6	Field Operations	
7	Fleet Replacement Study	

Table 4. Alignment of service delivery category #2 initiatives within intersecting categories of sustainability.

Service Delivery Category #3

Water Supply, Treatment, and Distribution System Investment

Investment in sustainable infrastructure that is resource efficient, cost effective, replicates natural hydrology and can adapt to a changing climate and other conditions will provide multiple benefits to the District and the community. The natural topography and gravity-fed distribution system provide unique opportunities for investment in technology within the system that produce energy, such as hydroelectric generators, while improving and rehabilitating the built infrastructure already in place will improve overall system performance. Planning, managing and accounting for full life cycle infrastructure expenditures will pay-off over time, resulting in reduced costs to the District and its current and future customers.

The initiatives included in this area are consistent with the Infrastructure Improvement Plan. Examples of some of the potential outcomes from implementation of these initiatives include:

1. Improved system performance (i.e., a reduced water loss rate)
2. Expanded recycled water usage
3. Reduced resource usage
    a. Electricity
    b. Natural Gas
    c. Water
4. Renewable energy generation and usage
5. Reduced greenhouse gas emissions
6. Reduced operational costs
7. Revenue generation

Case Study:
Riverside In-line Turbine

Riverside Public Utilities installed an in-line hydroelectric generator in a 48-inch pipe that utilizes the flow of water to generate electricity. The spherical turbine generates between 2 and 7 kilowatts of energy on a continuous basis, depending on the velocity of water through the pipe, and poses no threat to fish or wildlife.

- ***Initiative 3.1: Hydroelectric Generator Installations***

Description: Hydroelectric generators utilize pressure and flowing water within the distribution system to spin turbines and generate electricity. The District is currently replacing its out-of-service hydroelectric power generating turbine at the Van Horne Reservoir. A feasibility study is also underway to identify potential sites for installation of additional hydroelectric generators throughout the District's distribution system. This technology generates additional revenue for the District while reducing carbon emissions.

Anticipated outcomes and benefits: While it was still in operation, the Van Horne Reservoir generator produced an average of 521,465 kWh per year, and generated an average of $40,026 of revenue per year. Based on this information, a new turbine generator would pay for itself in approximately three years, and provide slightly higher revenue for the District in today's dollars. Installation of a second hydroelectric generator could increase annual revenue by an additional $40,000, while reducing energy costs.

Goal	*Completion Target*
Replace Van Horne Hydroelectric generator and complete feasibility study	September 2012

- ***Initiative 3.2: Recycled Water System Booster Station Electrical Upgrades***

Description: Through replacing four Variable Frequency Drives (VFD) and outdated support equipment with new technology and pump controllers, this project will ensure the long-term reliability of recycled water supply sources and save significant energy resources, which are used to distribute recycled water to District customers. The high efficiency design of the upgrade components will result in lower system stress and operational costs savings, as well as ensuring that the District can dependably meet future system demands of its recycled water customers.

Anticipated outcomes and benefits: In addition to increasing system reliability, this project will produce operational costs savings due to the need for fewer service calls. The ability to run four motors at optimum speed will require less electricity, thereby reducing energy costs.

Goal	*Completion Target*
Complete electrical upgrades	November 2012

- ***Initiative 3.3: San Ricardo Well Rehabilitation***

Description: This project involves rehabilitating and upgrading the San Ricardo Well to extract, treat and disinfect groundwater from the groundwater basin, as well as installing solar panels at the well. Once completed, the project will enhance the District's ability to meet customer water demands during drought, emergencies and periods of peak demand using local supplies, while offsetting the use of non-renewable energy. The solar installation component of this initiative will serve as a pilot project to inform future decisions regarding adding solar installations to other District distribution facilities, such as on top of reservoirs.

Anticipated outcomes and benefits: Upgrading and enhancing infrastructure such as the San Ricardo Well improves water and energy resource management capabilities. Upgrades will help to minimize the need to use imported water from the State Water Project, which requires significant energy to treat and move from the Bay Delta to Lake Cachuma. This initiative will reduce operational costs and conserve energy while enhancing the District's drought and emergency preparedness.

Goal	*Completion Target*
Rehabilitate and upgrade San Ricardo Well	March 2013

- ***Initiative 3.4: Water Treatment Plant Sustainable Wastewater Disposal & Irrigation Study***

Description: This project will repair and upgrade the wastewater treatment system at the Corona Del Mar Water Treatment Plant to enable sustainable disposal, such as use of wastewater irrigation and landscaping purposes. This will reduce or eliminate entirely the need to use potable water for landscaping at the CDMWTP.

Anticipated outcomes and benefits: This project will conserve potable water.

Goal	*Completion Target*
Utilize recycled water for irrigation and the Corona Del Mar Water Treatment Plant	March, 2013

- ***Initiative 3.5: Grant Application Readiness***

Description: Grant funding that is frequently made available through various local, state and federal agencies has the potential to offset costs of infrastructure investment, studies and projects the District plans to undertake. Efforts associated with seeking out grant funding will include initial research to identify available funding the District would be eligible to receive, followed by preparation of studies needed for sucessful grant applications. During the first year of implementation of the Sustainability Plan, studies and potential funding will be reviewed for two specific projects:

- **Glen Annie Reservoir** – The Bureau of Reclamation lowered the water level behind Glen Annie Dam when an engineering study revealed potential weaknesses through liquefaction during a seismic event. Once repaired, the reservoir can potentially serve as a storage facility for potable water for use during emergencies, storage for recycled water, or storage for spill water in wet years. Further studies are required to develop cost estimates and scope of work.
- **Cathodic Protection Program** – The District's recycled water line is approaching twenty years old, and has developed significant leaks that frequently require immediate and costly repairs. The steel pipe, which is 10 milies long, traverses the Goleta Slough, an environmentally sensitive marsh habitat, adding to the urgency of addressing potential leaks and preventing significant failures.

Anticipated outcomes and benefits: Grant funding can help offset costs associated with critical infrastructure investment, freeing up District capital funds for other important projects.

Goal	*Completion Target*
Ensure readiness for potential grant funding by completing analytical studies necessary to compete for grant funding for smart infrastructure projects.	June 2013

- ***Initiative 3.6: Goleta Beach Recycled Waterline Relocation***

Description: In response to direction from the California Coastal Commission, local agencies, including Santa Barbara County, may be required to allow natural forces to affect the limits of Goleta Beach Park. This means that sand movement and ongoing beach erosion could compromise the District's recycled water main, which runs along the beach. Taking proactive measures to protect the District's recycled water distribution system will ensure the viability of this supply source, and enable the District to adapt to changing environmental conditions that could accompany climate change, including sea level rise.

Anticipated outcomes and benefits: When the District is unable to deliver recycled water to its customers, potable water must be used as a substitute to maintain landscapes. Relocating the recycled waterline would prevent damages that could result from exposure from beach erosion, thereby preventing the need to use potable water where recycled water is currently utilized.

Goal	*Completion Target*
Commence work to relocate the Goleta Beach recycled waterline	November 2013

- ***Initiative 3.7: Infrastructure Improvement Program Evaluation Criteria***

  Description: Expand the Infrastructure Improvement Program (IIP) project evaluation methodology to include sustainability and efficiency scoring criteria. This will provide a tool to prioritize projects that improve energy efficiency, develop alternative energy sources, conserve water, and are adaptable to changing climatic conditions.

  Anticipated outcomes and benefits: This initiative will allow for prioritization of projects that create healthy work environments, reduce energy-use and associated costs, and generally support the District's sustainability principles, demonstrating its commitment to this effort.

Goal	*Completion Target*
Develop sustainability / energy efficiency scoring criteria for use in evaluating IIP projects.	January 2014

- ***Initiative 3.8: Corrosion Protection Program***

  Description: This project will proactively protect the District's steel water mains and pipelines and monitor problem areas early to avoid or stop leaks and water loss. The Cathodic Protection system prevents costly corrosion damage to the District's steel pipe distribution infrastructure. This infrastructure comprises approximately 50% of the District's distribution system, or 125 miles of steel pipe, providing service to approximately 8,000 customer accounts. Without proper monitoring of the system, the cost of repairing and replacing the District's steel piping system will increase.

  Anticipated outcomes and benefits: This project will ensure the effective management and conservation of the District's water resources, resulting in reduced costs for emergency repairs and conservation of water through leak prevention.

Goal	*Completion Target*
Protect steel distribution waterline from corrosion damage	Ongoing

- ***Initiative 3.9: Neighborhood Compatibility of District Facilities***

  Description: Installation of resource efficient and native landscaping as well as visually appealing facades to conceal and improve the aesthetics of District facilities, pump stations and buildings that are often located in populated areas and residential neighborhoods.

  Anticipated outcomes and benefits: Improving the appearance of facilities that are visible to the public will prevent any negative impacts to nearby neighbors, while also making facilities less noticeable to the public. This has the effect of increasing the protection and security of District assets.

Goal	*Completion Target*
Improve aesthetics of District facilities	Ongoing

- ***Initiative 3.10: Meter Replacement Program***

  Description: The meter replacement program proposes to replace all 16,000 customer water meters over a period of 30 years. The actual replacement rate will be influenced by periodic monitoring of failure rates and analysis of leaking or underperforming meters. This provides an opportunity to conserve resources and serve our customers in the most efficient way possible.

  Anticipated outcomes and benefits: New meters prevent water loss and improve revenue through more accurate reading of customer water usage.

Goal	*Completion Target*
Replace 530 meters annually	Ongoing

Sustainability Alignment of Water Supply, Treatment and Distribution System Investment Initiatives

As discussed, the clover-shaped diagram in Table 5 represents the intersection of the economic, environment and social categories of sustainability. Placing each of the 10 initiatives in the *Water Supply, Treatment and Distribution System Investment* category on the diagram shows that investments are heavily focused in the economic-environment area (intersection) of the diagram. This would be expected of infrastructure improvements, which mainly comprise this service delivery category, due to the cost savings resulting from system repairs, maintenance and upgrades, and associated energy savings and reduction in water loss.

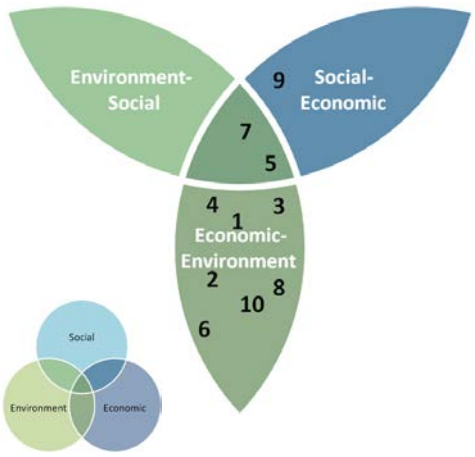
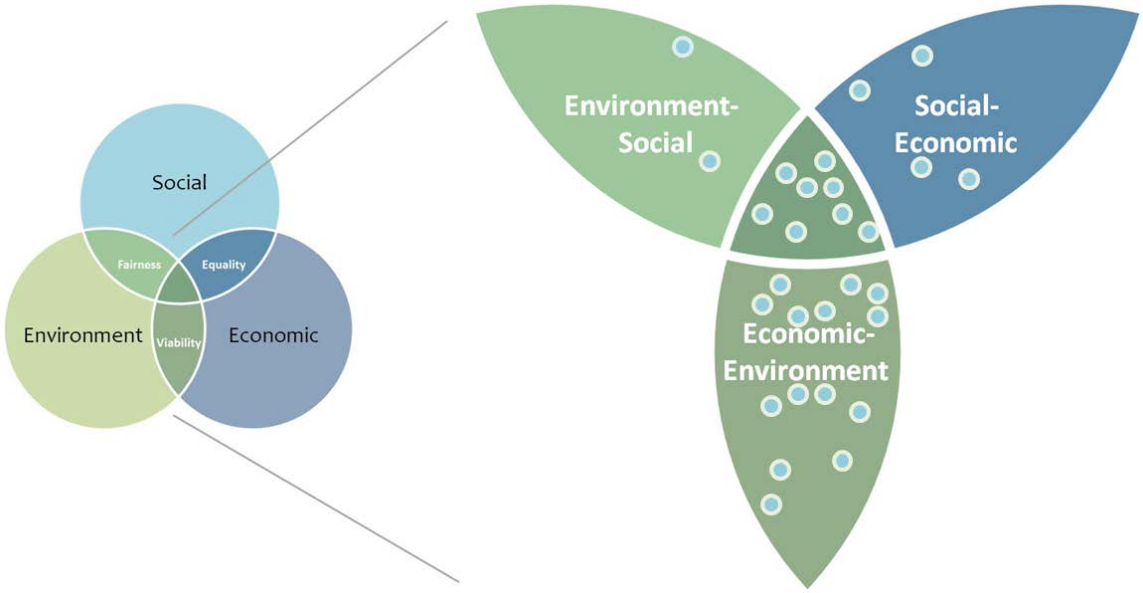
	Initiative	Sustainability Alignment
1	Hydroelectric Generator Installations	
2	Recycled Water System Booster Station Upgrades	
3	San Ricardo Well Rehabilitation	
4	Water Treatment Plant Sustainable Wastewater Disposal	
5	Grant Application Readiness	
6	Goleta Beach Recycled Waterline Relocation	
7	Infrastructure Improvement Program Evaluation Criteria	
8	Corrosion Protection Program	
9	Neighborhood Compatibility of District Facilities	
10	Meter Replacement Program	

Table 5. Alignment of service delivery category #3 initiatives within intersecting categories of sustainability.

Alignment between District Mission and Sustainability Plan

The strong nexus between the economic and environment categories of sustainability is evident when all 28 initiatives are viewed together (Figure 13). The diagram illustrates how this Plan and its associated project initiatives align with the District's mission of providing an adequate supply of quality water at the most reasonable costs for current and future customers.

As a public water utility, the District is first and foremost charged with preserving and protecting a critical natural resource for present and future generations. There is no question that current management practices to reduce reliance on traditional energy sources, preserve natural resources, promote operational efficiency and reduce costs directly support the long-term District sustainability. Every project we currently undertake is informed by these guiding principles. Finally, the planned critical infrastructure investments that are cited in this Plan build on the District's past successes, while establishing a forward-looking service delivery strategy.



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.

Figure 13. Alignment of 28 initiatives within sustainability diagram, illustrating the strong nexus between the environmental and economic categories of sustainability consistent with the mission of the District.

Next Steps

Data Tracking and Reporting

The District will establish a data gathering and reporting program to monitor progress in service delivery categories, including cost savings, energy savings, emissions reductions, water conservation and waste reduction, as well as progress in accomplishing goals of the annually established initiatives. This effort will be inclusive of progress reports and performance results focused on demonstrating progress. Performance reporting will enable the District to understand what is working and what is not, and adapt or adjust accordingly.

Sustainability Plan Implementation

Implementation of the Sustainability Plan will include development of public outreach materials for display booths and the District main office customer service area. The District website will also be critical to communicating sustainability practices, goals, and accomplishments to the public while serving as an example for other organizations. This Plan is intended to be scalable and replicable for use in supporting diverse grant proposals and applications made by the District or other local organizations. Accordingly, this information will be shared with stakeholders and the community to demonstrate District efforts so that others may benefit from our success.

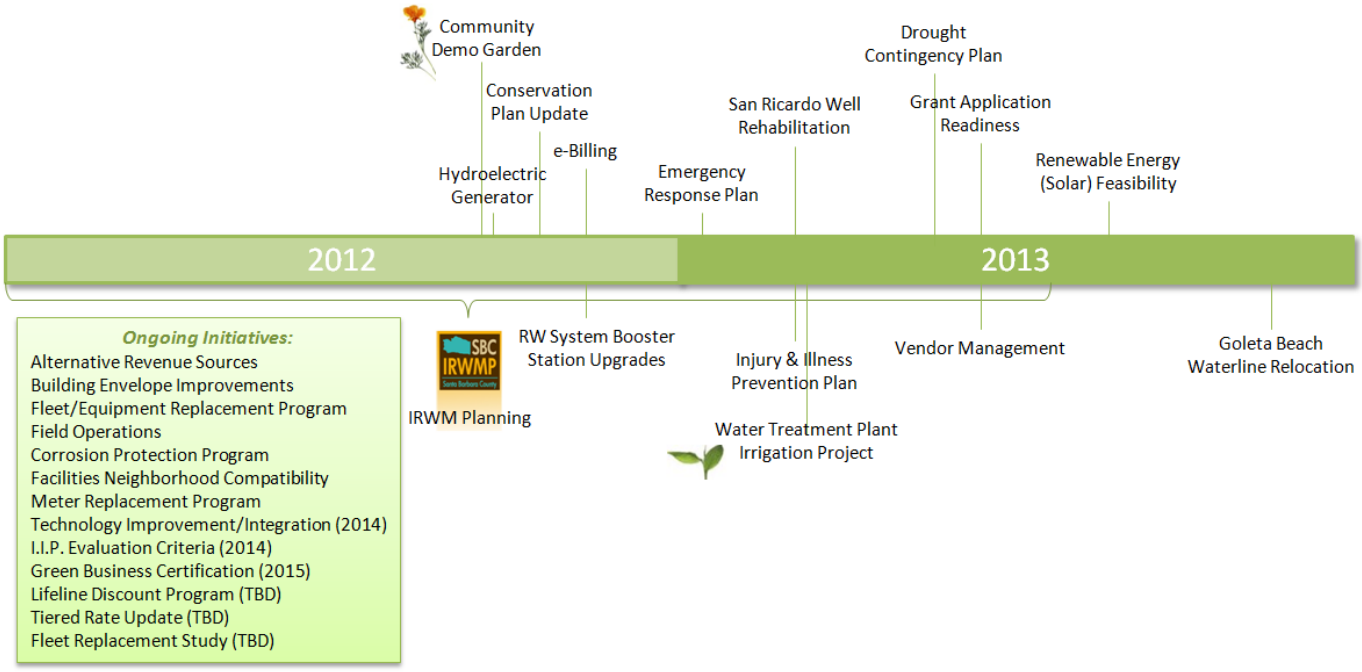


Figure 14. Sustainability Plan Implementation Timeline

Summary

Many of the initiatives and ideas presented in this Plan already exist in the District's ongoing management practices and efforts such as the Budget and Infrastructure Improvement Plan. The Plan collectivizes these isolated efforts under one thematic document that has also been designed to inform decision-making going forward. The document and Guiding Principles provide a lens through which the District can fully recognize, measure and evaluate the benefits accruing to the District, our customers and the larger community.

The District believes that a sustainable approach to service delivery is a fundamental component of upholding the District's mission. As illustrated throughout this Sustainability Plan, by utilizing the principles contained herein, District operations and service delivery will maximize financial performance and resource preservation while upholding community and social values. Figure 15 provides a snapshot of some of the District's sustainable features, illustrating the ways in which responsible resource management and sustainability concepts are integrated into District operations. The resulting benefits ultimately accrue to current and future customers by ensuring the sustainability of District operations into the future.

Figure 15. Investments for a Sustainable Future, providing an illustration of some of the District's sustainable features.

Appendices

Appendix 1: Resources

The following resources were used in the preparation of this report and provide the basis for analytical recommendations contained herein.

- Bowling Alone: The Collapse and Revival of American Community by Robert D. Putnam
- *Buried No Longer: Confronting America's Water Infrastructure Challenge* – American Water Works Association
- *Business: Society – The Millennial Survey 2011* – Deloitte Global Services Limited
- Cal-adapt.com (local climate change models)
- *Charting New Waters: Financing Sustainable Water Infrastructure* – The Johnson Foundation at Wingspread
- *Managing an Uncertain Future: Climate Change Adaptation Strategies for California's Water* – State of California Department of Water Resources
- *National Water Program Response to Climate* Change – U.S. Environmental Protection Agency
- *Our Changing Climate: Assessing the Risks to California* – CA Climate Change Center
- "Saints Beat Sinners" – Bloomberg.com/news/2012-02-17/saints-beat-sinners-for-sustainable-investing-stock-chart.html
- *The 21st Century Corporation: The Ceres Roadmap for Sustainability* – Ceres
- *The Costs and Financial Benefits of Green Buildings: A Report to California's Sustainable Building Task Force* – Greg Kats
- *The Impact of a Corporate Culture of Sustainability on Corporate Behavior and Performance* – Harvard Business School
- "US Census Bureau – Total Midyear Population for the World: 1950-2050" – www.census.gov/population/www/popclockus.html
- *Water Infrastructure Challenge* – Aspen Institute
- *Water Tight 2012: The Top Issues in the Global Water Sector* – Deloitte Touche Tohmatsu Limited

Appendix 2: Endnotes

[1] *The 21st Century Corporation: The Ceres Roadmap for Sustainability* prepared by Ceres
[2] "US Census Bureau – Total Midyear Population for the World: 1975-2050" Census.gov
[3] "Saints Beat Sinners For Sustainable Investing" article published by Bloomberg.com: Bloomberg.com/news/2012-02-17/saints-beat-sinners-for-sustainable-investing-stock-chart.html
[4] *Buried No Longer: Confronting America's Water Infrastructure Challenge* prepared by American Water Works Association
[5] *The 21st Century Corporation: The Ceres Roadmap for Sustainability* prepared by Ceres
[6] *National Water Program Response to Climate Change* prepared by the U.S. Environmental Protection Agency
[7] Data obtained via CalAdapt, an online tool developed by UC Berkeley's Geospatial Innovation Facility and the California Energy Commission, which allows users to view how climate change might affect California at the local level. Projected temperature data layers include data from four different models for two scenarios (high and low emissions).
[8] This information on climate change impacts is according to the U.S. Environmental Protection Agency in their report *National Water Program Response to Climate* Change
[9] www.cal-adapt.com
[10] *National Water Program Response to Climate Change* prepared by the U.S. Environmental Protection Agency
[11] Data obtained via CalAdapt using models developed by scientists from the Pacific Institute. Global models indicate that California may see up to a 55 inch rise in sea level within this century based on the expected rise in global temperatures.
[12] *Water Tight 2012: The top issues in the global water sector* prepared by Deloitte.
[13] "The Case of the Outspoken" article published by cnn.com: http://management.fortune.cnn.com/2012/02/15/the-case-for-the-outspoken-ceo/
[14] Bowling Alone: The Collapse and Revival of American Community by Robert D. Putnam
[15] *The Millennial Survey 2011* prepared by Deloitte.
[16] *Research Report: Energy Efficiency Retrofits for Commercial and Public Buildings* prepared by Pike Research
[17] U.S. Department of Energy, Energy Efficiency and Renewable Energy: www.afdc.energy.gov

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