Water Efficiency Plan

September 2011

"Innovative leader enhancing the vitality of Ventura."

Ventura Water Vision

Introduction:

Goals of the Ventura Water Efficiency Plan (Plan)

As a community that relies 100% on a diverse portfolio of local water supplies, it is critical that we plan strategically to meet the long-term needs and demands on our water system. The recently adopted 2010 Urban Water Management Plan provides the framework to help guide Ventura's water supply management and conservation actions for the future. While Ventura has steadily decreased water consumption levels since the drought in the early 1990s, state mandates require further reduction targets by 2020.

While our community has met these reduction targets, we are now focusing on maintaining these reductions and increasing our collective water and energy efficiency through greater conservation efforts. Also we are looking at the future reliability of our supply. As part of the Urban Water Management Plan we looked at single and multiple dry year impacts to our future water supply. The analysis identified that we would need to rely on 600 acre-feet of our groundwater credits to meet demands in the third year of a drought, if the drought were to begin in 2025. Although we have a large credit bank available to us at this time, it is uncertain that banked credits will be available in the future and if available, would the City be able to rely on this supply.

In addition, the City not only faces increased risks to our water supply from drought, but also from potential environmental restrictions, groundwater quality concerns, and litigation actions. In response staff has developed this Water Efficiency Plan to provide a road map to buffer the City from these potential impacts and improve the reduction targets we have already attained.

Demand Side Management

In 2001, Ventura became a signatory to the Memorandum of Understanding Regarding Water Conservation in California (MOU) and a member of the California Urban Water Conservation Council (CUWCC), establishing a firm commitment to the implementation of the Best Management Practices (BMP) or Demand Management Measures (DMM). The CUWCC is a consensus-based partnership of agencies and organizations concerned with water supply and conservation of natural resources in California. By becoming a signatory, Ventura committed to implement a specific set of locally cost-effective conservation practices in its service area.

Each component of Ventura's Water Efficiency Plan identifies if the State Department of Water Resources (DWR) or the CUWCC addresses a proposed efficiency program, by providing the reference number or letter assigned to that specific practice. In addition, the CUWCC has identified those practices deemed "foundational" to all water efficiency programs and those that can supplement an efficiency program as "programmatic".

It is our goal to integrate water efficiency into our operations and daily lives of our customers so that conserving becomes a passive action. In this manner we, as well as our customers, have made the changes and choices to be efficent in our daily routines.

Plan Development

To create the Water Efficiency Plan a Water Efficiency Task Force was formed including water, wastewater and stormwater staff to brainstorm various potential water efficiency programs. As a first step the task force developed a matrix to identify the various programs currently implemented and those that could be implemented over the next five year. The costs associated with each program and the associated potential savings were estimated to provide a decision making tool to evaluate each program.

Programs included in the plan incorporate the expansion of recycled water, public outreach, stormwater, greywater, and assistance to residential, commercial, industrial, and institutional customers. The goal of the task force is to continue to meet on a regular basis to assess how well programs are doing and how best to implement new programs. In this manner the plan will becoming a "living document" where new programs can be added to address public and staff recommendations.

Cost of Providing Service

Our water and wastewater funds are completely self-supporting. Our rates have to generate enough money to pay for all of our operations and maintenance to keep us financially stable. We do not receive any funding from the City's General Fund, and in fact we do not even make a profit, only enough to sustain our services.

Most customers receive a bill every two months, which for them covers their water and sewer services. A service charge is included, which is based on the size of the water meter and recovers some of our fixed costs associated with meter maintenance and billing services. But in reality, rates also pay for a wide range of less visible expenses - like planning, regulatory reporting, operation and maintenance for facilities, and environmental compliance. The other major cost driver is capital and infrastructure projects.

As a community it is important for us all to reduce our water usage long-term since we rely on local water sources – Lake Casitas, the Ventura River and groundwater wells. If we can manage within our resources, we won't have to bring in another water supply like so many of our neighbors. A new water supply could potentially cost multi-millions of dollars. Therefore, it is important to Ventura Water, our customers and our environment that we are efficient in the use of our precious water supplies.

Acknowledgements

Staff from Ventura Water, Public Works and Community Development, along with the assistance of community partners developed the Water Efficiency Plan. Ventura City Council participated in a workshop and adoption of the Water Efficiency Plan, and this included:

Mayor, Bill Fulton
Deputy Mayor, Mike Tracy
Councilmember, Neal Andrews
Councilmember, Brian Brennan
Councilmember James Monahan
Councilmember Carl Morehouse
Councilmember, Christy Weir

The Water Efficiency Task Force comprised of Ventura Water staff participated in preparation of the Plan, and this included:

Karen Waln
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Mary Walsh
Chris Palmieri
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Nancy Broschart
Frank Godinez

Members of our community participated in a workshop on August 18, 2011 and contributed to the review and completion of the plan, and this included:

Trane Detnailly
John Mundy
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Bob Schilken
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John Dickenson
Ron Merckling
Lance Lawhon
Sandra McCullough
Daniel Cormode
Leslie Purcell

List of Abbreviations and Acronyms

The following abbreviations and acronyms are used in this report.

AF	acre-feet
AFY	acre-feet per year
AMI	Advance Metering Infrastructure
BMP	Best Management Practices
Casitas	Casitas Municipal Water District
CDPH	California Department of Public Health
CUWCC	California Urban Water Conservation Council
DMM	Demand Management Measures
DWR	Department of Water Resources
ETo	evapotranspiration
EPA	Environmental Protection Agency
FCGMA	Fox Canyon Groundwater Management Agency
gpcd	gallons per capita per day
HCF	hundred cubic feet
mg/L	milligrams per liter
mg	million gallons
MGD	million gallons per day
OVSD	Ojai Valley Sanitary District
SWP	State Water Project
UWCD	United Water Conservation District
UWMP	Urban Water Management Plan
Foster Park	Ventura River Foster Park Area
VWRF	Ventura Water Reclamation Facility
WSS	WaterSense Specification

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Operational Best Management Practices

"High quality water is more than the dream of the conservationists, more than a political slogan; high quality water, in the right quantity at the right place at the right time, is essential to health, recreation, and economic growth."

- Edmund S. Muskie, U.S. Senator, speech, 1 March 1966 -

It is important for Ventura Water to optimize our own operational practices to demonstrate to our customers our commitment to water efficiency. This section outlines several key actions that Ventura Water intends to take to incorporate water efficiency as part of our operational practices. Water efficiency is an integral part of our operational ethic and responsibility.

Water Conservation Coordinator

CUWCC BMP: Foundational BMP 1.1.1
DWR DMM: L

Requirements: The City is to establish a water conservation coordinator position. The requirements do not specify if this is a full or part time position.

Status: In compliance and will continue implementation.

We have had someone in this position since 1989. The Ventura Water's Resource Planning Manager, who oversees water resources management for the City, manages the water efficiency program. Various City staff implement program activities as part of their regular assignment, which equates to one full time employee.

Phase: Continue to staff beyond the duration of this plan.

Cost: $25,000 for ½ time staffing of position

Responsibility: Water Efficiency and Customer Care Division

Water Waste Prevention

CUWCC BMP: Foundational - BMP 1.1.2
DWR DMM: M

Requirements: The City is required to do one of the following:

- Enact and enforce an ordinance or establish terms of service that prohibit water waste (single pass cooling, vehicle wash, commercial laundry systems and decorative fountains).
- Enact and enforce an ordinance or establish terms of service for water efficient design in new development (irrigation and landscape design).
- Support legislation or regulations that prohibit water waste.
- Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures.
- Support local ordinances that prohibit water waste.
- Support local ordinances that establish permits requirements for water efficient design in new development.

Status: In compliance and will continue implementation.

Implementation Strategy: The City has addressed a water shortage contingency plan that identifies levels of shortage, prohibitions and associated consumption reduction, penalties and charges that are outlined in the City's Mandatory Water Conservation Regulations of Ordinance, No. 92-07. These measures include additional water use restrictions as well as water use allocations for customers and punitive charges.

In April of 1989, the City adopted Ordinance 89-6 prohibiting activities and the penalties to be imposed for violations. The ordinance prohibits gutter flooding, non-recirculating fountains, customer plumbing leaks, hosing of hard surfaces, and automatic water serving in restaurants.

Public Outreach Component: Residents can contact Customer Care at (805) 667-6500 to report water waste. Utility service representatives assigned to daily meter reading routes receive a work order to respond within 48-72 hours to the report.

Phase: Continue to staff beyond the duration of this plan.

Cost: Approximately $20,000.

Responsibility: Water Efficiency and Customer Care Division

Landscape Ordinance

CUWCC BMP: Programmatic - BMP 5
DWR DMM: E

Requirements: The Water Conservation in Landscaping Act of 2006 (AB 1881) requires the City to adopt a landscape conservation ordinance by January 1, 2010. Pursuant to the law, the State Department of Water Resources prepared a Model Water Efficient Landscape Ordinance (Model Ordinance) for use by local agencies.

Status: The City has been operating under the State's Model Ordinance while developing a city-specific landscape ordinance, which is planned for City Council review in late 2011. In October of 2010 the City hosted a public stakeholder workshop where more than 20 interested stakeholders attended. Staff took those recommendations as well as work inter-departmentally to develop an ordinance specifically for The City of Ventura. The ordinance is currently in draft form and available on the City's website at: www.cityofventura.net/H2o

Implementation: Implementation of this ordinance will fall under jurisdiction of the City's Building and Safety Division, with assistance from Ventura Water. The City's Building and Safety Division will facilitate a water efficiency documentation review and water efficiency inspection records.

Summary of Review and Inspection Processes: Applicants will have the choice of following a simplified prescriptive approach (which limits the landscape design) or submitting a full landscape documentation packet as described in this Ordinance. Building & Safety will establish a tracking system of all permits issued for projects that required adhering to the Landscape Ordinance. The tracking system will notify staff whenever a development project submittal is ready for landscape water efficiency review or landscape field inspection. Staff will review and inspect landscaping for compliance with this Ordinance and record their findings in the tracking system set up.

Phase: Year 1

Cost: Approximately $6,000 for staff time associated with system configuration, reviewing, inspecting and recording.

Potential Savings Associated with Implementation: Not available at this time.

Responsibility: Building & Safety Division
Resource Planning Division

Water Loss Control

CUWCC BMP: Foundational 1.2
DWR DMM: C

Requirements: Implementation consists of at least the following:

- AWWA Water Audit standard water audit per the M36 manual and balance to quantify real and apparent losses.
- Data validation.
- Determining the economic value of loss recovery based on avoided cost.
- Component analysis of apparent and real losses.
- Advising customers of leaks.
- Loss reduction to cost effective levels.

Status: Currently we are implementing all the requirements except "Loss reduction to cost effective levels" which is dependent on funding. The City guards against water loss by maintaining and replacing meters and pipelines.

City practice is to try to replace all meters every 15 years. Large meters are tested and calibrated on a 12-18 month schedule. Additionally, the City operates a leak detection program for pipelines and continually replaces older pipelines as part of its capital improvement program.

The City conducts pre-screening audits every year. Unaccounted for water losses, estimated as the difference between water into the system and water sales, are summarized in the following table.

WATER LOSSES

	2006	2007	2008	2009	2010	AVG
Unaccounted water (%)	9	1	4	4	6	5

Data from City of Ventura, 2010 Urban Water Management Plan.

The City expects to complete the AWWA M36 Water Audit for 2009 and 2010 in 2011. Operations staff has attended the CUWCC's M36 workshop and are currently collecting data for the analysis.

The city would like to seek and identify unreported leaks and become pro-active with a leak management program. A visible water main break typically have very short run times, but because of the disruptive nature of such events, prompts an almost instantaneous response time, with a repair time of several hours. Reported main breaks estimate water loss would be far less than an unreported hidden leak, this is why a proactive leak detection program is important.

Unreported leaks, which are small and have a long duration, are these that escape the publics knowledge and are only identified by an active leakage program, working through the water utility. A leak detection survey is the most common means to identify unreported leaks. For example, leaks left for long periods of time often account for the greatest volume of leakage losses in a water distribution system.

A Pilot Program is on its way prior to a system wide audit. An entire Meter Route (where AMI's are installed) has been selected as a site for a Water Loss Pilot Program using City own equipment and personnel. A specialized company will be hired to conduct an outside study on the same route in order to identify and quantify further improvements. The Pilot Program will then be modified, and its results used, to perform a System-Wide Audit.

The Pilot Program will include the following steps:

1. Organize a combined metering and distribution staff team that will take ownership of program, implement best management practices for leakage control.

2. Collect data on Atlas on all vulnerable pipes and zones, and of Cast Iron, high hardness & corrosive soils, to develop a route and focus on areas where leakage is suspected.

3. Currently the City owns approximately 100 + perma-loggers that are deployed to areas throughout the distribution system for monitoring leakage.

4. Deploy perma-loggers into area to be monitored and gather data on a daily basis.

5. Once data is gathered and we have a suspected area of a leak, correlators or end-points are deployed an analyzed to pinpoint suspected locations of leaks. This technology uses a microprocessor to analyze leak sounds that travel through the water column along the leak wall.

Currently 6 Distribution System staff are trained and another six will be trained in the next six (6) months.

Implementation: Currently underway.

Cost: Initial cost for the Pilot Program is $4,000 to repair current leak detection equipment. Subsequent years if an outside firm does the work it could cost approximately $100,000.

Potential Savings Associated with Implementation: Assuming there is an average water loss in our system of 5%, we can hope to detect ½ of those losses, which would be a 2.5% reduction in water loss. With daily consumption of 10mgd – this would equate to 250,000 gallons per day or 333 HCF/day. At the current water rate of Tier 2 ($2.66 per HCF) a savings of 333 HCF/day would equate to a cost savings of approximately $323,3000, and a usage reduction of 2.2 gpcd. Of course this reduction would go down in subsequent years as less leaks were detected with a routine program in place.

Responsibility: Water Division

Commodity Rate Metering

CUWCC BMP: Foundational - BMP 1.3
DWR DMM: D

Requirements: Implementation consists of at least the following:

- Requiring meters for all new service connections
- Establishing a program for retrofitting existing unmetered service connections
- Reading meters and billing customers by volume of use
- Prepare a meter maintenance and replacement plan
- Explore mixed-use metering and dedicated landscape meters

Status: In compliance per City Ordinance 22.100 and 22.200 -Continuous implementation.

All of the City's retail customers are metered and billed with commodity rates for both water and sewer service. The City does not have any unmetered services and all new connections are metered and billed volumetrically.

Phase: Continue to implement beyond the duration of this plan.

Cost: Various city staff implement this requirement. The estimated cost of annual meter replacement is $468,000.

Potential Savings Associated with Implementation: Water and Wastewater Enterprise Funds are completely funded through monies generated through customer rates based on their usage, which must be set appropriately to self-sustain operations, maintenance and capital renewal programs. Savings are realized through proactive meter and line replacement, supporting environmental, legal and regulatory challenges, and continuous improvement of our water quality for future generations.

Responsibility: Water Efficiency and Customer Care Division

Retail Conservation Pricing

CUWCC BMP: Foundational - BMP 1.4
DWR DMM: K

Requirements: Volumetric rate structure, which can be uniform, tiered, allocation-based or seasonal rates as long as the volumetric portion meets minimum levels as defined (70 percent of rate variable).

Status: In compliance per ordinance 22.100 and 22.200 - Continuous implementation.

All of the City's retail customers are metered and billed with commodity rates for both water and sewer service. The City does not have any unmetered services and all new connections are metered and billed volumetrically.

Water accounts are billed bimonthly. Residential reflects an increasing block rate schedule, non-residential water accounts are billed with uniform rates and reclaimed water is charged a reduced, uniform rate. Since there is no direct measure of sewer discharge by residential customer, water use is used to estimate the sewer discharge. Annually a residential customer is placed in one of six sewer rates based on their lowest water consumption during the winter or sewer determination period, November 1 through April 30.

The wastewater rates are set using our rate model. The rate model generates the range to generate the revenue needed to cover our operating expense. This includes our operation, maintenance, CIP plan, debt and depreciation and reserve.

WATER RATES

Customer Class	Water Use (x 100 cubic feet)	Rate ($)
Residential (SF/MF)	1-16	2.02
	17-42	2.66
	43+	4.27
Non-Residential	1	2.66
City Parks	1	1.40
Reclaimed Water	1	0.50

This BMP is intended to reinforce the need for suppliers to establish a strong nexus between volume-related system costs and volumetric commodity rates. The requirement for BMP compliance is that at least 70 percent of a provider's revenue is met through volumetric rates and that fixed rates (service and meter charges) not account for more than 30 percent of revenues. The City has met this requirement for the entire reporting period.

REVENUES

Year	Total Water Revenue ($)	Portion of water revenue that is Volumetric (%)	Total Wastewater Revenue ($)	Portion of water revenue that is Volumetric (%)
2005 - 2006	16,347,259	85.6	13,058,212	98.86
2006 - 2007	18,556,883	86.8	14,057,036	98.86
2007 - 2008	19,585,204	86.2	15,539,812	98.81
2008 - 2009	20,077,357	84.5	15,826,130	98.71
2009 - 2010	20,322,814	81.8	16,718,292	99.17

Phase: Continue to implement beyond the duration of this plan.

Cost: Various city staff implement this requirement. Current rate review includes a $165,000 Cost of Service and Rate Design Study by Raftelis Financial Consultants, Inc (RFC). RFC shall evaluate the financial requirement for the future to support the long-term reliability of our important water and wastewater systems.

Potential Savings Associated with Implementation: Water and Wastewater Enterprise Funds are completely funded through monies generated through customer rates based on their usage, which must be set appropriately to self-sustain operations, maintenance and capital renewal programs. Savings are realized through proactive meter and line replacement, supporting environmental, legal and regulatory challenges, and continuous improvement of our water quality for future generations.

Responsibility: Water Efficiency and Customer Care Division

Unaccounted Water – Fire Training & Emergency

Goal: To work with fire to keep track of our yearly water loss.

Implementation Plan: Currently working with fire to report amount of water they use during any emergencies, brush fire, structural fire and any training at Alessandro Training Facility. Under the direction of the Fire Chief, and Assistant Chief, Don McPherson; effective July 1st, 2011 all water use from fire hydrants will be reported on the water log. Report every day- enter 0 if no water used that day. The log is to be completed daily by the Engineer under the Captains direction. The first day of each month the Captain on duty is to fax the water use log to the Battalion Chief on duty and start a new log. The originals are to be kept at the station in a file for 1 year then recycled.

Past practices had no log of water usage from the fire department. This is a new practice that the fire department and water department will be closely collaborating on.

Phase: Continue to implement beyond the duration of this plan.

Cost: None

Potential Savings Associated with Implementation: This practice is not designed to reduce usage since training and emergency are part of our standard usage, but this will allow us to better track the usage of water that was previously unaccounted for.

Responsibility: Water Division

Unaccounted Water – Fire Hydrants

Goal: To account for accidental loss of water and recoup costs associated with the loss.

Implementation Plan: To install hydrants and check valves at most frequently hit hydrants. For frequently hit hydrants, we replace with a 6" check valve that limits the flow to a 1" outlet; thus reducing the flow of water. Example: A 6" water outlet flowing for thirty minutes at 75psi has a flow rate of 70.8hcf, by reducing the outlet size to a 1" you would dramatically decrease the volume of water loss to 1.9hcf at a flow rate of thirty minutes.

Phase: Year 3

Cost: Approximately $5,000 Annually + Staff Time. When we are aware of who hit the hydrant the person responsible pays for the hydrant to be replaced. The check value cost around $500 and would be installed in only the most frequently hit hydrants.

Potential Savings Associated with Implementation: At the current water rate of Tier 2 ($2.66 per HCF) a savings of 9 AF/year or 3,920 HCF would equate to an annual cost savings of approximately $10,430, and a usage reduction of 0.07gpcd.

Responsibility: Water Division

Professional Development & Certifications

Goal: To collaborate with, encourage participation in and possibly develop in-house opportunities for both private individuals (landscape and plumbing contractors) and our employees to attend certifications, professional development workshops and continuing education programs.

The intent is to have a well-trained staff, but more importantly to have a relationship with qualified professionals in our community to whom we can refer our customers, thereby reducing our overall interaction with them for things that can be solved in the private marketplace.

Implementation Plan: Investigate certification bodies and determine which programs are most applicable to our needs. For instance, The City of Ventura is already a partner with Surfrider and G3 for a series of trainings for landscapers as a part of a Whale Tail grant for 2012. This will provide us a list of qualified landscapers who are trained in Ocean Friendly Garden pedagogies. Finding other certification bodies, like CLCA, IA, Green Plumbers and others (a new Rainwater and Grey water harvesting certification was just hosted in Santa Barbara). We can also work with Casitas Municipal Water District and Oxnard to host a County-wide training and certification in-house based on our particular programmatic needs.

Many of these certifying bodies offer the training for free or for a reduced fee but the certification has a cost. This would enable us to bring the training to our region at little cost but place the burden of the certification on the individual contractor.

One major piece to this certification program would be to require those who participate to report water saving retrofits annually. For instance, a landscape contractor would be required to track square footage of lawn removal and a plumber would be required to track water savings based on CA Green Building Code baselines and retrofits tables.

Phase: Year 3

Cost: Approximately $10,000

Responsibility: Water Efficiency and Customer Care Division

Advanced Metering Infrastructure (AMI) – Residential Leak Detection

Goal: The goal of this project is to inform residents of leaks they have that are detected by AMI enabled water meters.

Implementation Plan: As a CIP project, all residential water meters will be replaced with AMI enabled meters over a three-year period. These meters will have leak detection capabilities built-in and weekly leak reports will be ran. Once a leak is detected a web-based notification will be sent explaining that we have detected a leak and will point them to the Ventura Water website for more information on how to fix their leak. If needed, a Utility Services Representative can perform a site visit and assist the customer with further leak detection information.

Phase: Although this program has been initiated as a pilot project, it is anticipated that it will take several years to implement fully.

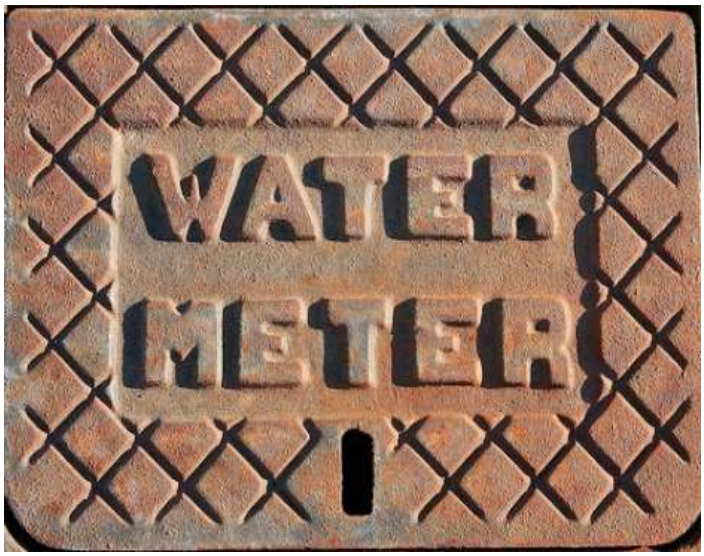
Cost: Approximately $50,000 (staff time + letters and website support) for a pilot program

Potential Savings Associated with Implementation: Unknown savings at this time until we have completed the pilot program.

Responsibility: Water Efficiency and Customer Care Division

Appropriate Meter for Service

Goal: Evaluate the cost effectiveness of replacing meters in commercial applications that are too large for the size of the building. Oversized meters may not capture low flows as well as smaller meters, so an opportunity to capture revenue may exist.



Implementation Plan: Staff will evaluate businesses with meters known to be too large and calculate estimated lost revenue on past consumption, PSI, and meter flow capabilities. If a meter is determined to be too costly to keep in service, a meter with better low-flow capabilities will be installed in its place with customer's concurrence.

Phase: Year 4

Cost: Approximately $25,000, but this may be offset by increased revenue from capturing otherwise lost low flows.

Potential Savings Associated with Implementation: No consumption savings.

Responsibility: Water Division

Residential Customers

"The health of our waters is the principle measure of how we live on the land."

- Luna Leopold, river pioneer and environmentalist

Demonstrating water efficiency is important to all of us. Our water customers continue to be effective in reducing Ventura's overall water demand. Customers use less water today then in 1970, even though the population has increased by 80%. Even in non-drought years water conservation makes sense, since unused water can be stored and made available for use later. Between 40-60% of urban water is used for outdoor landscape irrigation. Conserving water doesn't mean you have to change your entire lifestyle, but by being mindful of what you do around the house you can save both water and money.

WSS for New Residential Development

CUWCC BMP: New Requirement
DWR DMM:

Requirements: Provide non-residential customers with support and incentives to improve their landscape water use efficiency. The MOU specifies the following activities:

Integration of WSS fixtures for new development will be accelerated by the 2010 California Green Building Standards Code (CAL Green Code), which became effective in January 2011. The Code sets mandatory green building measures, including a 20 percent reduction in indoor water use, as well as dedicated meter requirements and regulations addressing landscape irrigation and design. Local jurisdictions, at a minimum, must adopt the mandatory measures; the Code also identifies voluntary measures that set a higher standard of efficiency for possible adoption.

The City requires homeowners making additions or retrofitting plumbing fixtures to comply with State Green Building Code, Energy Code and Plumbing Code standards for water efficient fixtures.

Status: Building and Safety currently evaluates plans and permits to comply with the CA Green Business Code. Depending upon whether or not the applicant falls under discretionary or ministerial permitting, the requirement is the same. Essentially they must comply with the 20% reduction in overall water use. This is achieved by simply calculating proposed fixture consumption with the provided baseline consumptions.

Phase: Year 1

Cost: Staff time

Potential Savings Associated with Implementation: Estimated to be 18 acre feet per year, based upon the assumption that at least 1000 customers will participate in residential assistance programs saving an estimated 3,000 to 9,000 gpy per household.

Responsibility: Resource Planning Division
Building & Safety Division

Residential Assistance Program (Indoor & Outdoor)

CUWCC BMP: Programmatic - BMP 3.2 and BMP 3.1
DMM: A & B

Requirements: Provide residential water surveys for both indoor and outside of the property to an average of 1.5 percent per year of current single-family and multi-family accounts during the first ten years after signing the MOU after that compliance requires maintenance of the program at the level of high-bill complaints or no less than 0.75 percent per year.

Status: The City conducted 4,262 residential audits between 2006 and 2008, which included both indoor and landscape elements. The surveys were discontinued in 2008 due to liability concerns.

RESIDENTIAL WATER SURVEYS AND RETROFITS

	2006	2007	2008	2009	2010
Surveys[(a)]	1153	1703	1406	0	0
Devices Purchased[(b)]	1,725	1,100	1,600	1,490	1200

Notes:
(a) Ventura records do not track SF and MF participation separately.
(b) Number of devices purchased is assumed to equal devices distributed.

Implementation Strategies:

(1) Waste Prevention & Response - A .75 to 1 FTE will respond to (1) unsolicited customer calls, (2) high-bill notifications, (3) leak detection notices and (4) water waste reports within 48 hours. Field staff that may also report water waste work orders using their hand-held devices (Judy's), which automatically create a work order. Response will include but not be limited to: returning phone call and assisting customer over the phone, directing customer to our website for further information, sending a letter and/or leaving a door-hanger at the property and/or responding in person.

(2) Residential Assistance Program (RAP) – Customers requesting a home water conservation audit or customers who have been notified of excessive water consumption more than two times per billing year can contact Ventura Water to schedule an appointment for the RAP. A staff person will come out to the home and perform a 20-30 minute inspection of the property, both indoor and outdoor, provide some water conservation devices (as needed) and provide recommendations for further conservation measures. Those who participate in the RAP will be eligible for one of our rebate programs.

a. Lawn 2 Garden Incentive Program - a rebate $2.50 per square foot of lawn removed from front yards and parkways and replaced with California friendly landscaping, up to 1,000 square feet will be made available qualified customers. Restrictions apply; (attend a class, submit a plan for approval, verification of proper installation, 5 year re-inspection).

b. Rebates - WBIC, Rain sensors, toilet rebate, high efficiency washing machine rebate and/or on-bill financing for proposed conservation measures subject to approval.

Phase: Phased in years 1-3

Cost: Approximately $40,000 for a first year pilot program. Some funding can be generated via high-bill levies and/or revenues from enforced violations.

Potential Savings Associated with Implementation: Estimated to be 18 acre feet per year, based upon the assumption that at least 1000 customers will participate in residential assistance programs saving an estimated 3,000 to 9,000 gpy per household.

Responsibility: Water Efficiency and Customer Care Division

WaterSense Specification (WSS) Toilets

CUWCC BMP: Programmatic - BMP 3.4
DWR DMM: N

Requirements: Provide incentives such as rebates, recognition programs, or reduced connection fees, or ordinances requiring residential construction meeting WSS for single and multi-family housing until a local, state or federal regulation is passed requiring water efficient fixtures. An incentive shall continue to be offered until City is meeting, at a minimum, WSS for water efficient single and multi-family homes.

Status: There is no uniform rebate program citywide.

Implementation Strategies: WaterSense, is a voluntary partnership program sponsored by the U.S. Environmental Protection Agency (EPA), designed to make it easy to save water by identifying water efficient products and services. Items that meet WaterSense specifications are independently tested and/or certified, and only then can they carry the WaterSense label.

WaterSense Specification (WSS) toilets are those that meet the current or updated standards; the current high efficiency toilet (HET) standard is 1.28 gallons per flush (gpf). The City ran a toilet rebate program from 1991 to 1995.

Rebates are now offered to the City's customers within the Casitas service area. Participation rates have been low with 7 rebates distributed to City customers since the program's start in 2008. The City is planning to expand its outreach efforts around incentive programs starting in 2012 in order to increase participation rates.

While the cost-benefit is low with this program (See Water Use Efficiency Master Plan, Kennedy Jenks, 2009), it may be somewhat beneficial to consider the public perception of not offering the baseline programs, which are currently offered in neighboring communities; and within our own city limits via Casitas Municipal Water District. By partnering with CMWD and CUWCC little staff time could be devoted to unifying our programs citywide, thereby gaining increased public support and much needed positive rapport.

Phase: Year 3

Cost: CUWCC had a grant that members participated to offset the cost of implementing such a rebate program and the cost to administer was $53 per rebate. The grant has run out of funding and the CUWCC is in the process of seeking new funds. It is estimated that $5,000 for a pilot program the first year for 20 customers to participate.

Potential Savings Associated with Implementation: 21.1 for SFR and 26.6 for MFR or .0002 gpcd per machine.

Responsibility: Water Efficiency and Customer Care Division

High-Efficiency Clothes Washing Machine (HECW)

CUWCC BMP:Programmatic - BMP 3.3
DWR DMM: F

Requirements: Provide financial incentives for the purchase of HECWs that meet an average water factor of 5.0 or the WaterSense Specification, whichever is lower. The annual target is 1.0 percent of current single-family accounts or 1.4 percent per year of the market penetration during the first ten years after signing the Memorandum of Understanding Regarding Water Conservation in California (MOU). In 2001, Ventura became a signatory to the MOU and a member of the California Urban Water Conservation Council, establishing a firm commitment to the implementation of the BMPs.

Status: The City has not implemented a HECW program to date. Rebates are available to the City's customer within the Casitas service area. Participation rates have been low with 10 rebates distributed to City customers since the program's start in 2007. The City is planning to expand its outreach efforts around incentive programs starting in 2012 in order to increase participation rates and to offer the rebates city-wide.

Implementation Strategies: While the cost-benefit is low with this program (See Water Use Efficiency Master Plan, Kennedy Jenks, 2009), it may be somewhat beneficial to consider the public perception of not offering the baseline programs, which are currently offered in neighboring communities; and within our own city limits via Casitas Municipal Water District. By partnering with CMWD and CUWCC little staff time could be devoted to unifying our programs citywide, thereby gaining increased public support and much needed positive rapport.

Phase: Year 3-5

Cost: CUWCC had a grant that members participated to offset the cost of implementing such a rebate program. According to a KJ Cost Benefit Report conducted in 2009, a HECW costs approximately $200 per rebate with an average annual savings of 5.25 gallons per wash per year. In order to fully compliment the CMWD rebate program, we'd need to budget at least $7000 per year, plus 25% administration costs.

Potential Savings Associated with Implementation: Estimated savings of 0.11 acre-feet per year based on the assumption of 35 customers participating.

Responsibility: Water Efficiency and Customer Care Division

Commercial, Industrial & Institutional (CII) Customers

"Anyone who can solve the problems of water will be worthy of two Nobel prizes - one for peace and one for science."

- John F. Kennedy, 35th President of the United State -

The City has approximately 2,700 CII accounts, accounting for about 27 percent of total water deliveries. In addition, landscape accounts comprise approximately 3 percent of Ventura's total water use. Metered landscape uses include assessment districts, contract parks, City parks, and other large irrigation areas. The City is in the process of developing a landscape irrigation ordinance; in the meantime the City adopted the State's ordinance with the intention of offering a more localized approach in the future.

Commercial, Industrial and Institutional (CII) Assistance Program

CUWCC BMP: Programmatic - BMP 4
DWR DMM: I

Requirements: Reduce CII use by 10 percent of the baseline over a 10-year period, defined in the MOU as 2008. Credit for prior activities is given for up to 50% of the goal. Implementation can be achieved through one or both of the following ways:

1. Implementing measures on the CII list with well-documented savings. These include: toilets, urinals, clothes, washers, cooling towers, food steamers, ice machines, steam sterilizers, water brooms and dry vacuum pumps.
2. Implementing unique conservation measures whose water savings are calculated on a case-by-case basis. Documentation is key to this option, Sample measures include: industrial process water use reduction, industrial laundry retrofits, car wash recycling systems, water-efficient commercial dishwashers, and wet cleaning.

Status: Currently not in compliance. The City has approximately 2,700 CII accounts, accounting for about 27 percent of total water deliveries. The City has identified and ranked its CII customers by use. Casitas offers CII audits to the City's customers; there has been one large audit performed to date. The City has not developed any conservation programs targeted specifically at these customers.

Implementation Options: Casitas Municipal Water District (CMWD) currently offers audits to CII customers by utilizing a contractor. It may be feasible to partner with CMWD and this contractor to make the audits available citywide. In addition, rebates for retrofits made by CII customers could be paid out using an on-bill financing mechanism.

Phase: Year 2

Cost: Unknown; possibly paid via on-bill financing mechanism

Potential Savings: Estimated $1000 to $2100 per survey with a potential savings of 1.74 AF per year.

Responsibility: Water Efficiency and Customer Care Division

Large Landscape

CUWCC BMP: Programmatic - BMP 5
DWR DMM: E

Requirements: Provide non-residential customers with support and incentives to improve their landscape water use efficiency. The MOU specifies the following activities:

1. Developing water use budgets at 70 percent Eto (100 percent for dedicated recreational areas) for 90 percent of accounts with dedicated irrigation meters in 10 years.
2. Assisting all accounts that are 20 percent over budget within 6 years.
3. Performing surveys on 15 percent of un-metered and mixed use meter accounts in 10 years (CII surveys that include both indoor and outdoor components can be credited against coverage requirements for both the Landscape and CII BMPs).
4. Providing an incentive program for irrigation equipment retrofits.
5. Provide notices each billing cycle with water use budgets.
6. Accounts without meters or with mixed – use meters:
    a. Develop and implement a strategy for marketing surveys (i.e. specifically targeting school districts with programs to assist with retrofits and water use efficiency upgrades)

b. Offer financial incentives (i.e. on-bill financing, discounted irrigation audits, rebates for WBIC, rain sensors, turf replacement, etc…)

Status: The City's metered landscape uses include assessment districts, contract parks, City parks, and other large irrigation areas. Landscape accounts comprise of approximately 3 percent of total water use.

The City's Parks Division began installing a centralized irrigation control system in 1990. The system is now installed in all City parks and includes 72 irrigation controllers that are remotely operated and two weather stations that track evapo-transpiration and weather patterns. Irrigation schedules for all City parks are based on local weather conditions and can be automatically adjusted.

In addition, master valves and flow sensors at each site are set to shut off irrigation lines automatically if breaks or malfunctions in the system are detected. Over the past two years, 25 of the 72 controllers have been upgraded by funding through the water conservation program. At other smaller irrigation sites that are not included in the centralized system, such as tract wall planters and small medians, the City is currently installing localized rain shut off devices.

Following installation of improved master valves and flow sensors in the system four months ago, the City observed a 10 percent decrease in irrigation water use attributed to control of unscheduled, excessive water flows from broken heads and lines. The City expects to complete the remaining upgrades by the end of 2011. The controller manufacturer projects a 20 percent water savings for the system. The City now requires that all new developments and CIP projects that the Parks Division is overseeing be linked to the centralized controller system. New CII landscapes must also have low water-use design and must employ water conservation measures.

There is an opportunity to set water budgets (as defined in the Draft Model Efficient Landscape Ordinance) for all CII Landscapes and simply assess water use based on pre-determined budgets. We've already developed a tool to calculate these budgets; it just needs to be tied into some kind of GIS database and/or the billing software.

Large landscapes fall under new CALGreen Ordinance, Section: 5.304.1 Water budget. A water budget shall be developed for landscape irrigation use that conforms to the local water efficient landscape ordinance or to the California Department of Water Resources Model Water Efficient Landscape Ordinance where no local ordinance is applicable.

Note: Prescriptive measures to assist in compliance with the water budget are listed in Sections 492.5 through 492.8, 492.10 and 492.11 of the ordinance, which may be found at: http://www.owue.water.ca.gov/landscape/ord/ord.cfm

The intent of this code provision is to reduce the overall outdoor potable water use by requiring that a water budget be developed for landscape irrigation.

Existing Law or Regulation: The City of Ventura has developed a Draft Model Water Efficient Landscape Ordinance (MLO), which is anticipated to go to City Council in late 2011. The City's Ordinance offers clients a choice between following a 'prescriptive approach', which is more stringent or following the standard MLO set by the State.

Phase: Year 2

Cost: Building and Safety will manage all projects that go through planning and permitting to ensure they comply with the MLO. Incentives and/or on-bill financing may be viable options to encourage compliance with the water budget as criteria.

Potential Savings: Estimated $200/acre to $2000/ acre for irrigation audits with a possible 0.2 AF per year saved.

Responsibility: Water Efficiency and Customer Care Division
Building & Safety Division

Public Information and Outreach

"We forget that the water cycle and the life cycle are one."

- Jacques Cousteau – Pioneer marine conservationist

It is important to our community to prevent water waste through public outreach and to increase public awareness of our water supply, infrastructure, service delivery and treatment systems. The City offers water conservation programs to elementary school students as well as large group assemblies, field trips and children's water events.

Public Information and Outreach will be a component in many of our programs, if not all areas of our operations. It is our goal to enhance the public's knowledge of Ventura Water's purpose and the scope of our responsibilities in providing water and wastewater services to our customers.

School Education Programs

CUWCC BMP: Foundational - BMP 2.2
DMM: H

Requirements: Implementation of a school education program and providing support and educational materials to local school district.

Status: In compliance and will continue implementation.

The City offers water conservation programs to elementary school students as well as large group assemblies, field trips and children's water events. Since 2009, water conservation has been added to the more popular, *"Where Does it Go?"* recycling and waste reduction presentation. In addition to this presentation, Ms. Sarick offers a K-12 presentation on *"What is a Watershed?"* for storm water related education and also offers *"The Magic of Water".*

Starting in 2010-11, the Ventura Unified School District (VUSD) has requested to work the Environmental Sustainability and Ventura Water to expand offerings of educational presentations.

EDUCATION PROGRAMS

	No. of Specific Water-related Presentations				
Grade	**2006**	**2007**	**2008**	**2009**	**2010**
K-3	14	19	12	46	85
4-6	12	12	9	44	23

Phase: Continue to staff this program.

Cost: Staff Time

Potential Savings: not applicable

Responsibility: Water Efficiency and Customer Care Division

Public Information Programs

CUWCC BMP: Foundational - BMP 2.1
DWR DMM: G

Requirements: Agencies shall maintain an active public information program to promote and educate customers about water conservation.

At minimum a public information program shall consist of the following components:

1) Contacts with the public (minimum = 4 times per year, i.e., at least quarterly).
2) Water supplier contacts with media (minimum = 4 times per year, i.e., at least quarterly).
3) An actively maintained website that is updated regularly (minimum = 4 times per year, i.e., at least quarterly).
4) Description of materials used to meet minimum requirement.
5) Annual budget for public outreach program.
6) Description of all other outreach programs.
7) Performance Measurement

Implementation Plan: Public Information and Outreach will be a component in many, if not all areas of operations. Each program will address their specific outreach needs, (i.e. print, web-based, staff personal time and/or strategic partnerships). Below is a list of outreach strategies to be phased in over the five-year plan and the corresponding program area.

Outreach Strategy	Corresponding Program
1. Online Media – VenturaWater.org (with links to other helpful sites), Facebook, Twitter and other social networking sites, online tutorials and videos (YouTube) and blogs, water budget information	All
2. Printed Materials – brochures, newsletters, bill stuffers, pamphlets, educational signage, posters, advertising (bill-boards, bus shelters, etc.) and information made available to Building & Safety and Planning.	All
3. Red Boxes – boxes in all service trucks that have water efficient devices and printed resources	Waste Prevention & Residential Assistance Program

4. Partnerships (both public and private) – special events, collaborating with other programs (i.e. Surfrider's Ocean Friendly Gardens or Environmental Sustainability's Business Certification Program), Casitas Municipal Water District's programs	Public Outreach, school program, special events
5. Direct mail – postcards, door-hangers and/or letters targeted to specific customer class/user groups	Waste prevention, Utility operations
6. Residents can contact Ventura Water Customer Care at (805) 667-6500 to report water waste	Waste prevention, Utility operations
7. Presentations: HOA's, Hospital boards, realtors, school district, Chamber, City Council, NGO's, etc…	Public outreach
8. Point of purchase information at local hardware stores: high-efficiency clothes washers, weather based irrigation controller, high-efficiency toilets, plants.	Public outreach, waste prevention, landscape
9. Professional Development - certification bodies like CLCA, G3, Green Plumbers, etc. List of certified professionals online.	Landscape, waste prevention, public outreach
10. Demonstration Gardens – signage & printed information available at demonstration gardens. Goals set to increase number of demonstration gardens city-wide each year.	Landscape, waste prevention, public outreach
11. Recognition and Awards – contests and recognition for projects (new development, remodels (SFR & MFR) and CII achieving and/or maintaining maximum water use efficiency	All
12. Public Information Survey – public information survey conducted to gather information on customer base for use in decision-making and performance measurement.	Public outreach

The City has had a satisfactory public outreach budget for water conservation advertising. The Table below summarizes program activities since 2006.

PUBLIC OUTREACH ACTIVITIES TO DATE

Activity	2006	2007	2008	2009	2010
Paid advertising	0	4	4	6	10
Bill Inserts / Newsletters / Brochures	31,000	31,500	31,550	35,000	4,000
Bill showing graphic of monthly water usage history	yes	yes	yes	yes	yes
Demonstration Gardens	yes	yes	yes	yes	yes
Special Events, Media Events	4	4	4	6	7
Speaker's Bureau	0	4	4	6	7
Program to coordinate with other government agencies, industry and public interest groups and media	yes	yes	yes	yes	yes

Phase: Continue to staff public outreach and phase-in new activities as prioritized.

Cost: Approximately $30,000

Potential Savings Associated with Implementation: Savings generated by public outreach will be captured in the programs it supports.

Responsibility: Water Efficiency and Customer Care Division

Facility Tours

Goal: To enhance the public's knowledge of Ventura Water's purpose and the scope of our responsibilities in Water and Wastewater. To encourage public participation and educate high school students and other interested parties to the public health and environmental issues we face on a daily basis.

Implementation Plan: Provide public outreach using Ventura Water facebook web site. Inform local school districts of availability for Ventura Water's Water and Wastewater plant tours.

Compile brochures with information about the plants specific operations. This material will be made available to all parties during tours as well as be available at the public counters.

Install small information boards around the Wastewater ponds describing the environmental benefits of the pond systems. This information can be changed seasonally to provide current information to guests.

Phase: Year 1

Cost: Approximately $500

Potential Savings Associated with Implementation: There would be no financial savings associated with implementation. However, there is the potential for water conservation savings.

Responsibility: Water and Wastewater Divisions

Ventura Water Special Event

Goal: Host a water awareness event and/or partner with local community organizations to highlight World Water Day on March 22, 2012.

Implementation Plan: Six months prior, decide on event format, audience and target goal. Create schedule and plan.

Phase: Year 1

Cost: Approximately $3,000

Potential Savings Associated with Implementation: No direct water savings, but increased awareness could result in less water use.

Responsibility: Ventura Water Administration

Public Survey/Market Research

Goal: To understand our customer's needs and to be able to plan effectively for the future.

Status: The City has never conducted a public information survey for the water utilities.

Implementation Plan: Submit a RFP to qualified consultants. Meet with them to develop the survey package. Implement the survey and analyze the results. Adapt current plan according to survey results. Develop performance measurement tool based on survey results. Repeat survey at end of five years.

Phase: Year 2 and Year 5

Cost: Approximately $50,000

Potential Savings Associated with Implementation: No direct water savings, but increased awareness could result in less water use.

Responsibility: Ventura Water Administration

Laboratory Education / Interning

Goal: To enhance the public's knowledge of the ever-increasing health and environmental regulatory requirements of water and wastewater treatment facilities. Along with the regulations come the need for analytical data that is validated internally (by the laboratory) and externally (by regulatory agencies such as EPA and DHS).

By informing and educating the public of the role and functions of the laboratory, we can also bring to light the regulations and regulating entities that drive the need for the laboratory and it's functions.

Implementation Plan:

A. Target Students:

Ideal target audience is students from elementary to college levels. By targeting students, we target a large and influential group with members that have current and personal interest in laboratories (as part of their education) and eventual personal interest in regulations (as future bill-payers).

At the lower grade levels, laboratory tours that can involve anything from simple guided tours to "hands-on" experimentation which will serve to educate students of the "background" or "hidden" aspects of water and wastewater treatment plants.

At higher-grade levels, in addition to tours, internship or volunteer work will serve to further educate. In addition, benefits are gained by both the laboratory (by obtaining additional labor) and the interns/volunteers (by obtaining invaluable work experience).

B. Target the General Public:

Information about the laboratory will be made available through Ventura Water's website and other social networking venues such as Facebook and Twitter. Along

with general information, water quality data may serve to entice visitors not only to the websites but also to the facility where further education can be provided.

Phase: Year 3

Cost: Approximately $5000 annually

Potential Savings Associated with Implementation: No immediate, numerable monetary gain or savings. However, by educating the public, especially the younger generations (i.e., students), the potential for future financial earnings/savings could be significant due the support that we develop through education.

Responsibility: Wastewater Division

Expansion of Recycled Water

"It is water, in every form and at every scale, that saturates the mind. All the water that will ever be is, right now."

- National Geographic, October 1993 -

The Ventura Water Reclamation Facility was expanded in 1972 to include tertiary filters to provide filtered effluent for both water reclamation and discharge to the Santa Clara River Estuary. Effluent reuse for irrigation is an integral part of the Reclaimed Water Program and is primarily used for landscape irrigation for golf courses and parks.

It currently represents a reduction in demand on the drinking water supply of approximately 325 million gallons per year. In addition, the filtered water is detained in three wildlife ponds for the support and enhancement of the estuarine habitat before discharge into the estuary. An expansion of water reuse, or water recycling, is currently in the planning stages.

Recycled Water Policy

Goal: Continue to implement the goals of the existing recycled water policy and review how the policy should be updated and revised to meet the requirements of the City's discharge permit.

Implementation Plan: City Council adopted current reclaimed water system expansion policy in July 1999. At the time of the adoption policy the City's Regional Water Quality Control Board NPDES Permit stated that at a minimum 5.6 mgd of effluent must be discharged to the Santa Clara River Estuary. The current available supply of reclaimed water to potential customers above and beyond existing demands was estimated at 1.2 mgd.

The existing master plan for reclaimed water was adopted in 1992 and recommended several projects that would expand and improve the reclaimed water system. The capital costs associated with the implementation of all the recommended improvements were estimated in 1992 to be over $5 million.

Phase: Year 1

Cost: Associated costs are unknown at this time.

Potential Savings Associated with Implementation: Not available at this time, but should become more apparent as policy revisions are completed.

Responsibility: Resource Planning Division

Ventura-Oxnard Recycled Water Interconnect Study

Goal: As part of the Santa Clara River Estuary Special Studies, the City has been evaluating alternatives to reduce the amount of effluent from the Ventura Water Reclamation Facility to the Santa Clara River Estuary. A recent study looked at three alternative uses for the effluent. This is a fourth alternative that would look at discharging the effluent to the City of Oxnard's Advanced Water Purification Facility (AWPF).

Implementation Plan: To utilize the AWPF a 10-mile pipeline would be required from the VWRF to the AWPF. Assuming a 20-inch diameter pipeline, the construction cost is estimated to be approx. $21 million. The City could also purchase an additional membrane skid for use at the AWPF at a cost of approx. $8 million which would allow for the City's effluent to be further treated and used within the Oxnard basin. If the treatment capacity is not available or if there is no demand for treatment, the effluent could potentially be discharged through Oxnard's ocean outfall. There is also potential to identify and evaluate serving recycled water to potential customers along the proposed pipeline route from the VWRF to the AWPF.

Phase: Year 1

Cost: Approximately $60,000 for the study.

Potential Savings Associated with Implementation: Reduces exposure to future litigation and regulation. This fourth alternative cost is estimated to be $29 million, which is significantly less than the three alternatives already evaluated. While this alternative does not offset potable demand it does have the potential to generate future revenue through the sale of the tertiary treated flows.

Responsibility: Wastewater Division

Ojai Valley Sanitary District (OVSD) Reclaimed Water

Goal: Reduce potable water usage by utilizing reclaimed water from OVSD to offset potable water demands from oil recovery operations (Aera Energy) and possible agricultural/irrigation.

Implementation Plan: There is no fixed schedule for undertaking this project; however further development of this project will require a number of steps to be undertaken. The City would need to execute a Memorandum of Understanding (MOU) with OVSD with regards to the use and operation of facilities associated with reuse of the effluent. The City may also need to develop a MOU with the Casitas Municipal Water District (Casitas) since the reuse of OVSD's effluent would be within Casitas's service area.
mitigable.

With respect to market assurances, until a full environmental impact analysis can be completed, the exact number of potential recycled water customers is unknown. However, since the largest potential customer is Aera Energy, with a current demand close to the amount of effluent available for reuse, an extraterritorial water service agreement between the City and Aera Energy to purchase the recycled water should provide sufficient market assurance for the City to move forward with the proposed project.

Phase: Year 4+

Cost: Approximately $1M

Potential Savings Associated with Implementation: At the current water rate of Tier 2 ($2.66 per HCF) a savings of 918 AF/year or 400,000 HCF would equate to an annual cost savings of approximately $ 1M, and a usage reduction of 7.22 gpcd.

Responsibility: Resource Planning Division

Reclaimed Water Expansion/ Urban Users

Goal: As part of the Santa Clara River Estuary Special Studies, the City has been evaluating alternatives to reduce the amount of effluent from the Ventura Water Reclamation Facility to the Santa Clara River Estuary. One alternative looked at increasing urban reclaimed water use in irrigation of parks, golf courses, recreational fields, municipal areas, churches, roadway medians, cemeteries, and other landscaped areas.

Implementation Plan: Phase I of the Recycled Water Market Study included a 5-mile radius of the Reclamation Facility. Approx. 450 irrigation accounts were identified in the study area. Assuming that 100 percent of the potable water demands associated with these accounts could be converted to recycled water it could potentially offset potable water use by 2.2 MGD.

Phase: Year 5

Cost: Approximately $62,000,000 based on $125-175 per linear foot and facilities. As projects are being done we are going to consider to co-locate reclaimed water pipeline with other projects, or we may expand a specific project to feed a specific area that reclaimed would be used.

Potential Savings Associated with Implementation: At the current water rate of Tier 2 ($2.66 per HCF) a savings of 9,552,342 AF/year or 5,562,455 HCF would equate to an annual cost savings of approximately $14.8M, and a usage reduction of 100.46 gpcd.

Responsibility: Wastewater Division

Reclaimed Water Expansion/ Agricultural Users

Goal: As part of the Santa Clara River Estuary Special Studies, the City has been evaluating alternatives to reduce the amount of effluent from the Ventura Water Reclamation Facility to the Santa Clara River Estuary. One alternative looked at implementing reclaimed water usage such as spray or drip irrigation of various types of crops grown in the region.

Implementation Plan: At this time, the VWRF is not able to provide the quality of water that would be needed to irrigate the crops located within a 5 mile radius due to the Total Dissolved Solids (TDS), sodium, and chloride concentrations.

In order to meet the water quality needed for agricultural irrigation, the VWRF would need to evaluate microfiltration reverse osmosis for removing TDS and chlorides in order to produce water that meets crop specific water quality guidelines.

Phase: Year 5

Cost: Approximately $145,000,000 based on $125-175 per linear foot and facilities. As projects are being done we are going to consider to co-locate reclaimed water pipeline with other projects, or we may expand a specific project to feed a specific area that reclaimed would be used.

Potential Savings Associated with Implementation: Cost savings not available at this time, however several variables inclusive of sustainability will have to be looked at when the project becomes viable.

Responsibility: Wastewater Division

Reclaimed Water Expansion/ Groundwater Recharge

Goal: As part of the Santa Clara River Estuary Special Studies, the City has been evaluating alternatives to reduce the amount of effluent from the Ventura Water Reclamation Facility to the Santa Clara River Estuary. One alternative looked at the potential of groundwater recharge.

Implementation Plan: This use involves percolation or injection of recycled water into underlying groundwater aquifers. Analyze the potential for groundwater recharge at the United Water Conservation (UWCD) Facilities, where the groundwater recharges via spreading ponds (i.e. percolation) is currently practiced.

Phase: Year 5

Cost: Approximately $36,000,000 based on $125-175 per linear foot and facilities.

Potential Savings Associated with Implementation:
Cost savings not available at this time, however several variables inclusive of sustainability will have to be looked at when the project becomes viable.

Responsibility: Wastewater Division

Greywater

Goal: To promote the installation of and use of greywater where feasible.

Implementation Plan: Chapter 16A the Ventura County Building Code establishes minimum requirements for the installation of greywater systems in occupancies regulated by the Department of Housing and Community Development (HCD). It is intended to provide guidance to code users while providing flexibility that will encourage the use of greywater. This chapter contains provisions, which allow the installation of limited types of greywater systems to be installed without a construction permit.

It is not the intent of HCD that the exemption from a construction permit be construed by code users as an exemption from the provisions of this chapter or other lawfully enacted requirements imposed by a city, county, or city and county, nor does it eliminate the need for persons considering the installation of a greywater system from contacting local authorities to ensure they are adequately informed about any local requirements or prohibitions.

The City of Ventura will provide this information to its customers who are interested in installing greywater systems. The guidelines are available online at:

http://www.ventura.org/rma/build_safe/pdf/special/2007_Adopted16A_Revised%201-20-2010.pdf

Phase: Year 5

Cost: Approximately $100,000 for 1st year pilot program

Potential Savings Associated with Implementation:
Based upon assumption that at least 1000 customers will participate in the program saving an estimated 3,000 to 9,000 gpy per household.

Responsibility: Water Efficiency and Customer Care Division

Stormwater

"We think of our land and water and human resources not as static and sterile possessions but as life giving assets to be directed by wise provisions for future days."

- Franklin D. Roosevelt, 32nd President of the United States –

As stormwater flows across the surface of our community we have the opportunity to retain or capture these flows before they are diverted into stormwater drains that go directly into our rivers and ocean. By retaining this flow we can allow the water to percolate into the ground and replenishing underground aquifers. These aquifers are an important source of water to sustain our community.

If captured, the water can be used later to offset landscape irrigation demands. In addition, streams and other natural habitat can become overwhelmed by the greatly increased volume and speed of stormwater flows, resulting in severe erosion and ecosystem impacts. These increased flows also increase the risk of flooding and necessitate costly flood prevention improvements. Therefore, the capture of stormwater flows can assist us in offsetting our treated water demands with the added benefit of protecting our watersheds.

Residential Rain Collection to Off-Set Potable Water Use in Landscaping

Goal: To encourage residents to capture rainwater from their roofs for watering landscaped areas.

Implementation Plan: Participate in Ventura County's annual Rain Barrel Truck Load sale held at the Ventura County Government Center every Fall. The City will advertise the event and encourage Ventura residents to participate. Also, the City will make available an on-line "how-to" instructional video for those who want to install a low cost rain collection system at their home. Rain harvesting information will also be included in other outreach.

Phase: on-going.

Cost: Approximately $100/year for advertising

Potential Savings Associated with Implementation: Each resident who installs one rain barrel to supplement potable water use for landscaping would save an estimated 100 gallons of potable water per year. If 100 residents had one rain barrel, this would equate to a water savings of about 10,000 gallons per year, or about 13-15 HCF's savings per year.

Responsibility: Water Efficiency and Customer Care Division

Green Streets Stormwater Infiltration

Goal: To collect, treat and infiltrate dry-weather stormwater runoff in City streets right of ways throughout Ventura.

Implementation Plan: Install a "Green Streets" demonstration project in a City street and install smaller green street features in coordination with City paving projects.

Phase: Some small green street projects have already been installed, and others are in design.
Cost: Approximately $500,000 for the Green Streets Demonstration project, and about $20,000 to $100,000 per year for the various green streets projects. Funded from the City's paving budget as directed by City Council.

Potential Savings Associated with Implementation: Anticipate negligible water infiltration since these systems are designed to treat low-flow runoff using vegetation.

Responsibility: Ventura Water and Public Works Department

New Development Stormwater Infiltration

Goal: To collect, treat and infiltrate stormwater runoff in new developments and re-development projects when technically feasible. If technically infeasible, an equivalent amount of runoff will be managed at an off-site location.

Implementation Plan: The Community Development Department will ensure that new development and re-development projects conform to the stormwater requirements of the City's MS4 Stormwater permit and the adopted Stormwater Technical Guidance Manual per City AP&P #32.2. The permit limits the amount of impermeable surfaces and requires the project to capture, treat and retain on-site all rain events of ¾" or less.

Phase: The new requirements begin October 11th, 2011.

Cost: Approximately $95,000 was allocated to Community Development to implement this program, although, it is expected that costs will be recouped through developer fees. The design and installation costs are borne by the developers rather than the City. Public Works may accept responsibility to maintain the completed facilities if Maintenance Assessment District funding is available and the systems are designed for low maintenance. Otherwise, the private development will be responsible for maintaining the facilities with annual inspections regulated by Public Works.

Potential Savings Associated with Implementation: Anticipate negligible water infiltration since these systems are designed to treat low-flow runoff using vegetation.

Responsibility: Ventura Water, Community Development and Public Works Departments

Rain Harvest at City Facilities

Goal: To harvest rain water at City facilities to add to raw water supplies or replace potable water use on landscaped areas.

Implementation Plan: Conduct a feasibility study of installing 100,000 square foot rain collection systems at the Avenue water treatment facility and at the Kingston Reservoir to add to the raw water supplies. Also, consider installing a rain collection system at the City's Sanjon Maintenance Facility as a demonstration project. The water collected at Sanjon would be used to irrigate landscaping rather than as a raw water supply

Phase: No rain collection systems have yet been designed or built on City facilities.

Cost: Approximately $10,000 for a feasibility study to install a rain collection system as a raw water supply, and about $35,000 to install a demonstration water collection system at the City's Maintenance Yard.

Potential Savings Associated with Implementation: A 100,000 square foot rain collection system would capture about 700,000 gallons of rainwater per year, or about 940 HCF's.

Responsibility: Ventura Water and Public Works Department

Nexus of Water & Energy

"In an age when man has forgotten his origins and is blind even to his most essential needs for survival, water along with other resources has become the victim of his indifference."

- Rachel Carson,
Founder of contemporary environmental movement,
Author of Silent Spring

Nexus of Water & Energy

Ventura takes an active leadership role in protecting our natural resources and promoting environmental quality. Transporting and treating water to provide clean drinking water and treated wastewater is highly energy intensive. In response to these high-energy demands, Ventura Water has reduced its energy use significantly over the last 3 years.

Through various energy efficiency measures, water treatment and distribution operations have reduced electricity use by 2.5 million kilowatt-hours annually, or about 19%. Water staff have provided over 2,000 water audits to support wise water use and educated over 3,000 school children annually with conservation education. Wastewater operations have cut electricity use by 1.5 million kilowatt-hours annually – a 16% reduction. In addition, Ventura Water produces over 2 million-kilowatt hours of electricity annually by renewable waste gas co-generation, which meets up to 20% of the Water Reclamation Facility's energy use.

These impressive reductions have reduced the city's annual greenhouse gas emissions by over 1,100 metric tons, the equivalent of removing 2010 cars from the road. As water demand increases, additional costs will be borne by treatment and delivery systems, including expenditures associated with acquiring access to new water resources, development of new infrastructure, and enhanced treatment. By implementing demand side management to efficiently reduce our water usage and wastewater production we can potentially avoid both the service costs and the associated energy expenditures associated with providing these services.

Appendices

- Literature Cited
- Water and Wastewater Cost Of Service And Rate Design Study – Scope of Work Description

Literature Cited

"City of Ventura Recycled Water Market Study Phase 1 Report", March 2010, Carollo Engineers.

"Feasibility Study on the Reuse of Ojai Valley Sanitary District Effluent- Final Facilities Planning Report", September 21, 2007, Nautilus Environmental.

"City of Ventura 2010 Urban Water Management Plan", June 2011, Kennedy/Jenks Consultants.

"Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan", March 2011, State of California Natural Resources Agency Department of Water Resources.

"Best Management Practices", First adopted December 11, 1991, Last amended September 16, 2009, California Urban Water Conservation Council.

SCOPE OF WORK DESCRIPTION

The following sections outline the tasks to complete a three-phase comprehensive Cost of Service and Rate Design Study (Study) for Ventura Water.

The first phase is to prepare long-term financial plans for the water and wastewater enterprises that ensure financial sufficiency to cover the operations and capital costs and provide prudent reserves. Consultant will also conduct a rate and charges workshop with Ventura Water to engage the stakeholders in the rate structure design process and to prioritize pricing objectives, which will be used in the design and evaluation of different alternative rate structures.

In the second phase, the Consultant will review, evaluate and perform cost-of-service analyses for Ventura Water. As a result of the analyses, the Consultant will recommend changes to current water and wastewater rate structures to enhance equity, revenue stability, and defensibility consistent with the policy decisions and pricing objectives in Phase 1.

The last phase of the Study is Rate Adoption. Consultant will assist Ventura Water with presenting the results of the Study to the City Council, and the Consultant will prepare the report summarizing the results to address the requirements of Proposition 218.

The tasks in the three phases are shown below. While tasks are listed consecutively, elements of tasks may be conducted concurrently with other tasks.

1.1.1 Phase 1: Financial Plan for Water and Wastewater Enterprise Funds

1.1.2

1.1.2.1.1.1.1 Task 1: Project Initiation, Management and Data Collection

The Project Initiation task will begin the Study so that it progresses in an efficient and deliberate manner. Task 1 includes the collection and review of all relevant data and documents, a kick-off meeting, project management, and a quality assurance/quality control process.

1.1.2.1.1.1.2 Task 1.1: Data Collection and Kick-off Meeting with City Staff

Prior to the kick-off meeting, the Consultant will submit a detailed data request list to Ventura Water so all appropriate data in the required format can be collected efficiently. This electronic data will include, at a minimum, several years of historical customer billing data and financial information such as approved budgets, financial statements, official statement for debt, and water and wastewater master plans.

The Consultant will conduct a kick-off meeting to provide a solid foundation for the project and serve as a forum for Ventura Water and other City staff to provide input on the project approach, work plan, schedule, and priorities. The meeting's focus is to ensure that project participants are in mutual agreement as to the project goals and expectations. Consultant shall prepare a kick-off meeting package that contains the meeting agenda and presentation materials to guide the discussion.

Meeting(s)/Conference(s): One (1) kick-off meeting
Deliverable(s): Data request list and meeting minutes

1.1.2.1.1.1.3 Task 1.2: Ongoing Project Management

Consultant shall provide consistent and competent project management to ensure project success and adherence to timelines and budgets. This task involves multiple interrelated work efforts that will require effective coordination between Ventura Water and City staff, Consultant project team, and City Council. Consultant will meet project objectives through effective communication, teamwork, objectivity, and accountability. Project management components will include adoption of procedures for regular and open communication between the project team members and City staff; preparation of regular progress reports to track schedule and budget and to identify potential problems, challenges, and solutions; and coordination of project activities between Consultant and City staff to develop and present project recommendations and deliverables.

Consultant will also be responsible for general administrative duties such as client correspondence, billing, project documentation and administration of the study control plan.

Meeting(s)/Conference(s): One (1) kick-off meeting
Deliverable(s): Data request list and meeting minutes

1.1.2.1.1.1.4 Task 2: Financial Plan Framework Development

This task involves performing bill frequency analysis to determine the usage patterns, usage block sizes and seasonal usage differentials for different customer groups, and evaluation of the City's financial situation. In addition, this task will include development of specifications for a customized financial planning and rate model for financial projections and policy issues associated with the implementation of the proposed water and wastewater rate structure and future rate adjustments.

1.1.2.1.1.1.5 Task 2.1: Perform Bill Frequency Analysis

To help the City gain a better understanding of the consumption trends, Consultant will examine the usage patterns of the different customer classes and the associated usage peaks. By analyzing billing consumption trends, the Consultant shall identify customer groups to allow better decision-making regarding rate design and analysis of customer impacts. Based on this historical usage analysis and planning data, the Project Team will develop projections of future water consumption.

1.1.3 Task 2.2: Review and Evaluate Current Financial Information and Recommend Financial Policies and Programs

As part of this task, Consultant shall evaluate the City's operating and capital reserve requirements, financial and rate policies and recommend appropriate changes to the existing policies that will allow the Water and Wastewater Enterprises to most effectively meet financial goals. These financial policy requirements will include identifying appropriate target reserve levels for each enterprise's operating and capital programs; when these reserves can be used; infrastructure replacement funding from operations; debt funding of Capital Improvement Program (CIP), if needed; and debt service coverage designed to allow the City to meet its financial objectives and goals while achieving improved rate stability and revenue sufficiency.

1.1.4 Task 2.3: Develop Model Specifications

Consultant shall develop a user-friendly, flexible Model that the City can use for future financial planning and rates development. The rate Model will include the following features:

- Ability to create, save and compare different financial scenarios for ease of understanding impacts.
- Modeling multiple rate structures for different customer classes;
- Providing flexibility to change various assumptions by year;
- Calculating rates for multiple years and updating rates annually with ease;
- Flagging errors and problematic results such as failure to meet debt coverage, reserves below target levels, etc.;
- Performing sensitivity analyses and running various scenarios so that impacts can be viewed in real-time with built-in screen graphics; and
- Providing forms for easy input, report printing, update, understanding, and administration.

Consultant shall customize the Model to fit the specific needs and unique characteristics of the City. The Model shall contain a variety of user-friendly features including report generation, scenario analysis and Dashboard functionality. The Dashboard is a custom-built analytical tool that allows the model users to make changes to critical variables and see the resulting impacts instantly on the various elements of the City's financial plan. The Dashboard is especially useful during the decision-making process so that Boards and City Councils can evaluate the impacts of different rate scenarios instantly.

Meeting(s)/Conference(s): At least one (1) phone conference and one (1) on-site meeting with City staff
Deliverable(s): Bill Frequency Analysis and Model Specifications

1.1.5 Task 3: Conduct Pricing Objectives Workshop

Consultant will develop pricing objectives and assist City staff and/or stakeholders to prioritize pricing objectives so that the Consultant can efficiently evaluate and recommend rate structure alternatives. A partial list of pricing objectives may include:

- Revenue Sufficiency - Rates should generate revenues sufficient to meet revenue requirements despite fluctuations in flows, usage, variability in treatment costs, loadings, etc.

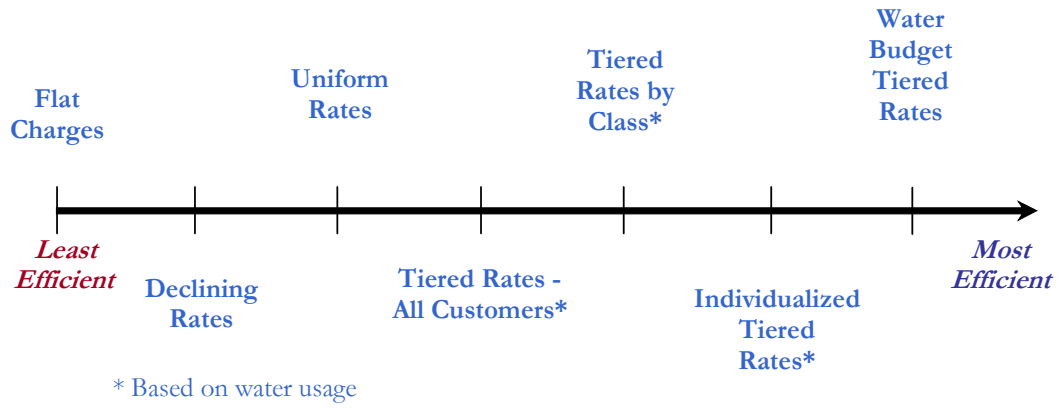
- Conservation - Rates should be designed to send a signal for conservation

- Defensibility - Rates should be designed according to standard industry practice and in accordance with applicable law such that rate disputes are avoided

- Simplicity and Ease of Implementation - Rates should be readily understandable by customers and be able to be implemented using existing staff and the existing billing and collection infrastructure with only minor modifications, and

- Rate Stability - Rate structure should minimize dramatic rate increases or decreases over the planning period.

Consultant will provide a comprehensive list of pricing objectives to be prioritized by staff. The first figure below shows the different rate structure alternatives that the City may evaluate.



The figure below shows a sample pricing objectives scorecard to be provided by the Consultant.

Classification	Rank Total	Objective	Current Rate Structure	Modified Structure
Most Important	1	Financial Sufficiency	A	A-
	2	Revenue Stability	A-	B+
	3	Rate Stability	B+	B
Very Important	4	Equitable Contrib from New Customers	A	A
	5	Defensibility	C+	A-
	6	Cost of Service Based Allocations	C	A-
Important	7	Conservation/Demand Management	C	A-
	8	Minimization of Customer Impacts	A	B
	9	Ease of Implementation	A	B+
	10	Simple to Understand and Update	A	B+
Least Important	11	Affordability to Disadvantaged Customers	C	B
	12	Economic Development	B	B
OVERALL SCORE			B+	A-

Meeting(s)/Conference(s): One (1) on-site meeting with City staff and City Council
Deliverable(s): Workshop materials and handouts

1.1.6 Task 4: Develop Long-Term Financial Plan

The objective of this task is to develop a forecast of revenue requirements for a ten -year planning horizon. This will include forecasting annual operating and maintenance (O&M) expenses, reserve contributions, review of the master plans to identify capital outlays, pay-as-you-go capital items, and annual debt service. Also, as part of this task, the Consultant will develop cash flow analysis including a profit and loss statement and recommend reserve levels.

1.1.7 Task 4.1: Develop Revenue Requirements

This task will include the projections of budget items, such as annual costs related to sources of water supply, labor, power, materials, capital expenditures, plant investment, operating and maintenance (O&M) expenses, reserve contributions, and debt service using assumptions based on different economic factors and growth trends. Consultant shall review the City's existing three water sources as well as explore the potential to increase its portfolio of available water resources including recycled water. As part of this task, the Consultant will prepare a financial analysis for future alternative water resource strategies and their associated impacts.

Consultant shall recommend a pass-through funding mechanism for water supply and power cost increases that are outside of the City's direct control. Consultant will also review the City's 2% Public Art requirement policy and right of way calculation.

Consultant will develop a forecast of water and wastewater revenue requirements over the 10-year planning horizon. This will include an estimate of revenues based on current rates, usage characteristics, and other non-operating revenues. Revenue requirements will be projected over the rate-setting period based on historical results, the current budget, capital improvement plans, existing debt service, other obligations and current economic trends. Capital cost financing from rates, debt, low interest SRF loans, grants, taxes, or infrastructure bank loans will be provided as options. Projecting revenue adjustments over a long planning horizon can illustrate future rate impacts and potential challenges to the City's financial situation. This will allow the City to make adjustments to expenses, reserve balances or schedule capital projects to smooth rate impacts and maintain financial stability.

Of particular concerns are the significant capital expenditures related to various options to remove effluent form the Santa Clara River Estuary, including an expansion of the reclaimed water system, which is expected to be in the tens of millions of dollars. Consultant will evaluate and analyze all possible options, related costs and funding mechanisms. Consultant will also review and make recommendations regarding the current relationship with Saticoy Country Club Water System.

1.1.8 Task 4.2: Develop 10-Year Cash Flow Analysis and Recommend Reserve Balances

Consultant will develop a multi-year cash flow analysis to determine the revenue adjustments needed to meet projected revenue requirements for the planning period, minimizing sharp rate fluctuations. The cash flow worksheet incorporates revenues generated from different sources, expenses needed to maintain the water and wastewater systems, any transfers in and out of the enterprise funds, as well as the coverage needed to meet current and proposed debt service requirements. A profit and loss statement will be included. Consultant will also review reserves policies to recommend appropriate reserves balances, such as operating, capital, rate stabilization, etc., consistent with industry standards and the City's risk management practice. The model will be capable of projecting beyond the ten-year planning period.

Meeting(s)/Conference(s): At least two (2) GoToMeeting web conferences and one (1) on-site meeting with City staff
Deliverable(s): 10-year Financial Plan Model and Proposed Revenue Adjustment Schedule

1.1.9 Phase 2: Cost of Service Analysis for Water and Wastewater Enterprises

1.1.10

1.1.11 Task 5: Cost of Service Analysis

Consultant shall conduct a cost of service study based on industry standards and methodologies approved by the AWWA M1 Rate Manual and the SWRCB and WEF. The cost of service allocations will focus on appropriate service functions, allocating the cost of service (revenue requirements) to the service functions, determining how those services are used by each customer class, and developing the cost allocation components of the models. Cost allocations among customer classes for the water enterprise will likely be based on the AWWA approved Base-Extra Capacity approach which focuses on the different usage patterns (or peaking factors) demonstrated by each customer class as well as Best Management Practices from the California Urban Water Conservation Council (CUWCC). Wastewater rates will comply with the SWRCB guidelines to ensure that the City will qualify for potential grants and low interest loans.

Throughout the cost allocation process, the Consultant will comply with City policy considerations, procedures, and currently known federal, state, and local rules, regulations, and guidelines. Additionally, the Consultant will ensure that all proposed rates are in compliance with Proposition 218.

1.1.12 Task 5.1: Review Customer Class Usage Patterns and Recommend Customer Classifications

Consultant shall review and analyze historical water consumption, revenue records, and billing summaries to determine water usage and peaking characteristics by customer class or subclass. For the wastewater utility, the Consultant will examine items such as annual flow and strength and perform a mass balance comparing plant influent to the estimated wastewater generated by the City's users including infiltration and inflow. This analysis will allow the Consultant to appropriately identify loadings from each customer class. This analysis will be based on billing summary data, other locally available data which may be applicable, and the Consultant's experience with other utilities exhibiting similar usage characteristics and patterns. It will provide the basis for equitable cost allocations to each customer class or subclass.

1.1.13 Task 5.2: Allocate Costs to Functional Cost Categories

During the next step, the Consultant will allocate the cost of service to the various cost components that constitute a functional classification of the different types of service the City provides. Functional cost components for water will include base commodity costs, extra capacity costs, private fire protection costs, customer service and other indirect costs. Functional cost components for wastewater include flow, chemical oxygen demand (COD) and suspended solids (SS). These will represent the revenue requirements from these cost components to be met from charges and fees over the study period.

1.1.14 Task 5.3: Allocate Functional Costs to Customer Classes

Next, the costs associated with the functional components will be allocated to the various customer classifications on the basis of the relative responsibility of each classification for service provided. Costs will be allocated based on the determination of units of service for each customer classification and the application of unit costs of service to the respective units.

Meeting(s)/Conference(s): None
Deliverable(s): Cost of Service Analysis, Cost Allocation by Customer Class

1.1.15 Task 6: Calculate Water and Wastewater Rates

1.1.16 Task 6.1: Calculate Rates

After conducting the cost allocation analysis, the water and wastewater rates will be calculated for the current and proposed rate structures. During the design process, the Consultant will work within the broad industry guidelines and practices as well as federal, state, and local rules and regulations, particularly the consent decree and Proposition 218 requirements, in order to meet the strategic financial objectives of the City.

Consultant shall develop rate calculation modules to incorporate and evaluate alternative rate structures. The water rate model will have the flexibility to change the tier widths based on customer class and/or meter size. Changes to tiers and rates, as well as changes to water demand, can be done through the scenario analysis options readily to view impacts. The Model will determine the required rate for each tier to collect the required revenue.

In addition, Consultant will review the existing wastewater rate structure and propose alternatives to simplify and provide equity amongst user classes. The industrial users' rates will also be calculated based upon their flow, COD, and SS, as well as all administrative costs related to providing service. All residential and non-residential rates, including parks and/or community gardens rates, will be calculated based on cost of service and will comply with all regulatory requirements, especially Proposition 218. Consultant will also review and evaluate the relationship between existing fixed fire line charges and connection fees.

1.1.17 Task 6.2: Calculate Outside City Rates

The City currently provides water service to County or outside City customers as well as wastewater service to McGrath State Beach Park and the North Coast Communities (Ventura County Service Area 29). Consultant will review and calculate the outside City rates consistent with cost of service principles. Some factors to consider in developing outside City rates include, but are not limited to, the following:

1. Utility approach
2. General Fund provided services
3. Incremental costs of providing service
4. Risk factors such as liabilities, switching to other providers, etc.

Additionally, the Consultant will review the current agreements with McGrath and Area 29 and make recommendations to revise those agreements to ensure full cost recovery to the City. Additionally, the Consultant will review the costs of serving Saticoy Country Club Water System.

1.1.18 Task 6.3: Calculate Customer Impacts

Consultant shall determine the potential financial impacts on customers that may result from the proposed rates. The model will include a series of tables and figures that show projected rate impacts on different types of customers at different level of usage.

1.1.19 Task 6.4: Conduct Rate Survey

Consultant shall conduct a rate survey comparing the recommended rates for all customer classes with those of five (5) neighboring and comparable agencies. Comparing rates with other representative agencies can provide insights into a utility's pricing policies related to service. However, based on the Consultant's experience, the Consultant shall also identify community-specific factors that affect the cost of providing services to provide a wider perspective on pricing differences. Some of these factors may include geographic location, demand, customer constituency, level of treatment, level of grant funding, age of system, level of general fund subsidization, and rate-setting methodology.

1.1.20 Task 6.5: Review and Calculate Miscellaneous Fees

As part of this task, the Consultant will review the City's current miscellaneous fees schedule and calculate the cost of providing those additional services to its customers, such as turn on, turn off fees, late charges, cross connections administrative fees, meter and service installation fees, etc. Consultant shall utilize the City's fully burdened hourly rate schedule and work with the City in estimating the time it takes to complete these tasks. Consultant will seek to identify all of the costs associated with a service provided to ensure that all costs are recovered from those benefiting from the services. The updated fee schedule will be provided to the City as part of this task.

Meeting(s)/Conference(s): At least two (2) web conferences with City staff
Deliverable(s): Draft copy of Water and Wastewater Rate Model in Microsoft Excel® 2007, Rate Survey, and Miscellaneous Fees schedule

1.1.21 Phase 3: Rate Adoption

The goal of this task is to present final recommendations to City staff and City Council and prepare reports detailing the results of the study. Consultant shall present at the Public Hearing and also discuss guidelines for staff training and customer service issues related to implementation.

1.1.22 Task 7: Report Preparation

1.1.23 Task 7.1: Draft Report

The process for developing the financial plan and proposed rate structures along with preliminary rate recommendations will be described by the Consultant in a preliminary report of findings and recommendations. This preliminary report will include an executive summary highlighting the major issues, results, and recommendations of the study. A comprehensive section will include all key assumptions used in the study and methodologies used to develop the user rate calculations and financial planning.

1.1.24 Task 7.2: Final Report

Comments and changes from City staff will be incorporated by the Consultant into the Final Report, which will be refined to reflect appropriate issues or concerns raised by staff. The final report will be submitted to the City and will include appropriate supporting data from the Model to address the requirements of Proposition 218.

Meeting(s)/Conference(s): At least one (1) phone conference with City staff
Deliverable(s): 10 bound copies, 1 unbound copy, and 1 electronic copy of the Final Report

1.1.25 Task 8: Rate Adoption

1.1.26 Task 8.1: Proposition 218 Notice Requirement

Consultant shall work with City Counsel to assist the City in preparing appropriate language for the City's Municipal Code and policy documents to reflect any proposed changes to the rates and/or rate structures as well as reviewing the Proposition 218 notice. The notice is required to be sent out to property owners/customers at least 45 days prior to public hearings. Proposition 218 dictates that an agency cannot collect revenue beyond what is necessary to provide service and that the amount of fee may not exceed the proportional cost of service to the parcel.

1.1.27 Task 8.2: Public Hearing

Consultant shall attend and assist staff to present at one (1) public hearing meeting with City Council on the adoption of the new rate structure.

1.1.28 Task 8.3: Update City Codes

Consultant shall assist City to update the Ventura Municipal Code and other City policy documents to reflect all financial, policy or rate modifications, as needed to be in compliance with new findings.

Meeting(s)/Conference(s): One (1) public hearing meeting
Deliverable(s): Presentation materials for public hearing meeting

1.1.29 Task 9: Implementation Assistance

As part of this task, the Consultant will assist the City in addressing different implementation issues and strategies for successfully adopting the proposed rate structures.

1.1.30 Task 9.1: Public Outreach Meetings

Due to the sensitivity of utilities rates, the Consultant shall support the City as it engages the community in a collaborative process. The Consultant will attend up to four (4) community meetings, including the City Council and possibly the Finance, Audit, and Budget Committee or Advisory Committee, to both share and receive information regarding the purpose and need for the rate adjustments and potentially new rate structures for water and wastewater services.

Consultant will provide information, both verbally and in written forms, to educate the public about the study, its purpose and need, desired outcome, and timeline in an easy-to-understand format for distribution at community meetings. Any formal presentations will be facilitated by the Consultant to provide technical assistance, answer questions regarding the study, and make presentations about the rates and the associated impacts.

Meeting(s)/Conference(s): Up to four (4) on-site public outreach meetings
Deliverable(s): Presentation materials and hand-outs

1.1.30.1.1.1.1 Task 9.2: Model Training and Manual

At the end of the study, the Consultant will provide training and assistance to City staff on the use, update, and maintenance of the model, especially on the use of the pass-through water costs. The training session will include working through realistic sample scenarios to fully prepare the staff to independently use the model for future analyses. Additionally, the session will provide training to allow periodic updates to the cost of service allocations and annual updates to the operating and financial forecasts and adjustments to the rates in compliance with Proposition 218.

Consultant will also provide an operating manual to City staff detailing the required data inputs, a description of the overall functions of each major component of the model, and a description of the procedures necessary to successfully operate the model, conduct “what-if” analysis, and adjust the model annually to account for changes in users, revenue requirements and other financial parameters. As part of this task, the Consultant will spend half a day with City staff to address any questions and comments that may arise out of the training session. The model will be turned over to the City at the conclusion of the study.

Meeting(s)/Conference(s): One (1) meeting to train City staff on the use of the model
Deliverable(s): Model and Training Manual

1.1.30.1.1.1.2 Task 10 – Economic Impact of Groundwater Enhancement Facilities

The City is required by the California Department of Public Health (DPH)to reduce the total dissolved solids (TDS) in potable water to meet secondary standards. CDPH will allow the City to continue delivering water with levels of TDS exceeding secondary standards, if it is determined that customers are not willing to pay higher rates to fund additional treatment costs. The City desires to calculate the financial impacts to customers resulting from the capital and operating costs of additional groundwater treatment processes and/or facilities. Consultant shall review the existing reports related to construction and operational costs of

the treatment facilties and determine possible rate increases to customers. The City intends to poll customers to determine their willingness to fund the higher costs. The Consultant will incoporate the resultant costs, if any, into the cost of service analysis.

1.1.31 Optional Task(s)

1.1.31.1.1.1.1 Task 11: Stakeholder Meetings

Consultant shall conduct up to six stakeholder meetings with a representative group of customers. Stakeholders will be provided input on the rate study process from beginning to end. The purpose of these meetings is to ensure that stakeholder viewpoints are evaluated and responded to as revenue programs are crafted. The Consultant will prepare presentations for each meeting and provide presentation to staff before each meeting for comment and incorporation into presentations. The Consultant will assist in preparing the final presentation by the stakeholders to City Council. This task incorporates two incremental meetings along with four from Task 9.1.

Meeting(s)/Conference(s): Total of Six stakeholder meetings (Task 9.1 4 meetings + 2 additional meetings)
Deliverable(s): Presentations for each meeting

1.1.31.1.1.1.2 Task 12: Water Budget Rates

Development and implementation of a successful water budget rate structure requires buy-in from policy makers. Since water budgets are developed for each individual customer, there is extensive data compilation and analysis. If the City determines that a water budget rate structure is the best option for implementation, Consultant shall perform the following additional tasks:

1.1.31.1.1.1.3 Task 12.1: Policy Workshop

Consultant shall present several policy options and the objectives associated with each policy to the City Council or stakeholders.

Shown below is an example of the objectives associated with different options for estimating landscape areas: measured by GIS, 30 percent of lot size, or varying percentage of lot size by lot size bins. The objectives associated with estimating landscape areas include low administrative cost, individualized needs, scientific method, and rewarding past outdoor conservation. If administrative cost and rewarding past outdoor conservation are considered the most important, then 30

percent of lot size option should be recommended. Similar exercises will be completed for all of the policy options. Consultant shall work closely with the City to identify the policy options that need City Council/stakeholder buy-in. This approach will facilitate informed decision making and ensure early buy-in.

Consultant shall summarize the outcome of the Workshop and the recommended water budget framework that best fits the City's needs. A concise memo will be provided that contains an explanation of all of the components of the proposed allocation factors for the associated tiers.

Meetings/Conferences: One (1) on-site meeting with City Council/Stakeholders
Deliverables: Workshop materials, handouts, and Rate Structure Framework Memo

1.1.31.1.1.1.4 Task 12.2: Develop Water Budget Rates Model and Rates

Based on the conservation framework developed, Consultant shall develop a Conservation Rate Model (Model) that will calculate rates and conduct revenue and customer impact analyses. The Model will utilize representative consumption data provided by the City and the associated landscape area for each account.

The water budget rate model (Model) will have the following standard features:

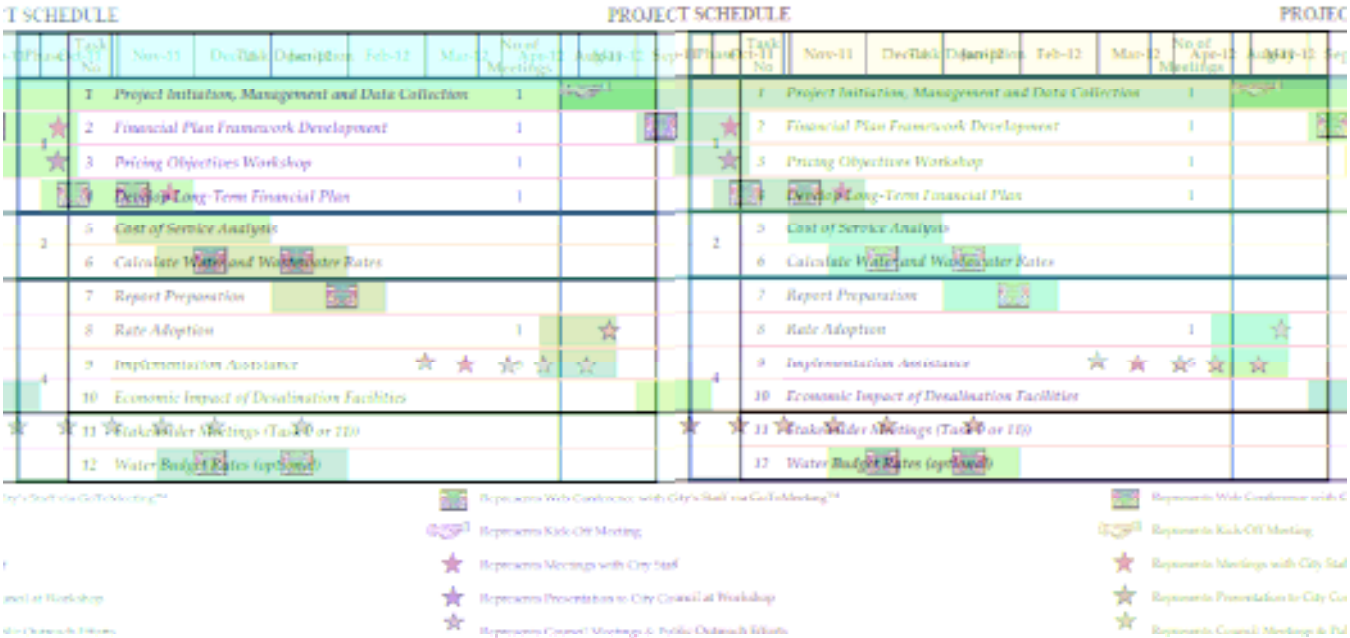
- **Parameters for Water Budget.** The ability to change the default values for the water budget parameters, such as gallons per capita per day or ET adjustment factors.

- **Methodology to Estimate Landscape Area.** The ability to choose different methodologies of estimating irrigable landscape area including percentage of lot size, or percentage of lot size less building footprint or landscape area with ability to apply landscape area caps for large residential lots to preclude mega water budgets. City will provide RFC the lot size and/or landscape area for residential and irrigation properties to be charged under this rate structure.

- **Rates and Tiers.** The Model calculates the commodity rates based on the required revenue requirement components and projected usage in each tier. The usual components include water supply cost, City's unrecovered fixed cost, conservation program costs, and any other water program costs such as desalinated water, recycled water, etc. The Model will provide the flexibility to evaluate different policy options regarding the recovery of the City's unrecovered fixed costs and conservation program costs. In addition, the Model will be able to easily update tiered rates based on the required future revenue requirements.

Deliverable: Water Budget Rate Model

SCHEDULE


PROJECT SCHEDULE
Task No
Nov-11
Dec-11
Jan-12
Feb-12
Mar-12
No of Meetings
Apr-12
1 Project Initiation, Management and Data Collection 1
2 Financial Plan Framework Development 1
3 Pricing Objectives Workshop 1
4 Develop Long-Term Financial Plan 1
5 Cost of Service Analysis
6 Calculate Water and Wastewater Rates
7 Report Preparation
8 Rate Adoption 1
9 Implementation Assistance
10 Economic Impact of Desalination Facilities
11 Stakeholder Meetings (Task 10 or 11)
12 Water Budget Rates (optional)
Represents Kick-Off Meeting
Represents Meetings with City Staff
Represents Presentation to City Council at Workshop