Southern California Gas Company A Sempra Energy utility®

Glad to be of service.®

WATER—ENERGY NEXUS

CPUC WORKSHOP, March 29, 2013

Frank Spasaro, SoCalGas
Elise Goldman, WBMWD
Bill McDonnell, MWD

Southern California Gas Company

- Southern California Gas Company (SoCalGas) has been delivering clean, safe and reliable natural gas to its customers for nearly 140 years.
- It is the nation's largest natural gas distribution utility, serving a population of 20.5 million consumers through 5.7 million gas meters in more than 500 communities.
- Headquartered in Los Angeles, we are a regulated subsidiary of Sempra Energy (NYSE:SRE), a Fortune 500 company based in San Diego.
- Awarded the J.D. Power and Associates 2011 Gas Utility Residential Customer Satisfaction Award in the West.

Southern California Gas Company

The company's service territory encompasses approximately 20,000 square miles of diverse terrain throughout Central and Southern California, from Visalia to the Mexican border.

Our commitment to provide customers with world-class service has been the key to our longevity and success. Our motto, "Glad to be of service" reflects this spirit.

SCG EE 2013 -2014 Programs

- SCG has been doing EE programs that relate to water since ------ !
- Residential
- Commercial, Industrial, Agriculture

Single Family Rebate Program

- Single Family Rebates:
  - Cash rebates are available to residential customers for purchasing and installing qualified energy efficient products in existing single-family detached homes, attached homes (up to a four-plex), condominiums and mobile homes.
  - Customers may participate in 3 ways:
    - Mail-In Rebates
    - Online Application
    - Instant Rebates (Point of Sale)
    - Visit www.socalgas.com/residential for list of participating retailers and qualifying measures
- Qualifying Products & Rebates:
    - ENERGY STAR® Qualified Dishwashers (280 kWh or below) - $30
    - ENERGY STAR® Qualified Clothes Washers/ Tier I - $35/$50
    - High Efficiency/ENERGY STAR® Qualified Natural Gas Storage Water Heaters - $30/$75

For more information visit www.socalgas.com/rebates/residential/

Single Family Rebate Program

- Tankless Water Heater Rebate (available via manufacturer)
  - Available for the purchase and installation of an ENERGY STAR® qualified tankless water heater via participating manufacturers.
    - $200 for EF of .90 or higher
    - $150 for minimum EF of .82
  - List of manufacturers on: www.socalgas.com/rebates/residential/tanklesswaterheater

- Evolve Roadrunner Showerhead Rebate
  - Rebated at select retailers within SoCalGas territory – $15
  - www.efi.org/socalgas - online sponsored web store front

Single Family Rebate Program

- Energy Efficiency Starter Kits:

  Energy Efficiency Kit for 2013!

  - Available at NO COST to customers.
  - Includes one low-flow showerhead (1.5 GPM), one kitchen faucet aerator (1.5 GPM) two bathroom faucet aerators (1.0 GPM each), furnace filter whistle, and a hot water temperature gauge card.
  - May help save as much as 30% of water consumption and also reduce the energy used to heat the water.

- How to request a kit:
  - Online at www.socalgas.com/residential/EE_kit_promo
  - At events where SoCalGas is present (trade shows, fairs, seminars)
  - Kits arrive in 10-12 weeks.
  - Additional low flow showerhead may be purchased at www.efi.org/socalgas

Multifamily Rebate Program

Cash rebates are available for the installation of qualified energy efficiency products in apartment dwelling units, common areas of apartments, condominium complexes, and mobile home parks. Property owners (and managers) of existing residential multifamily complexes with two or more dwelling units may apply.

- ✓ Mail-In only applications (Online application to come)
- ✓ Reservations are required for controllers only, and are accepted via fax, e-mail or U.S. mail
- ✓ Reservations are valid for 45 days
- ✓ Measures are purchased and installed, customers mail complete application
- ✓ Once inspection has been completed and application is approved, a rebate check is mailed approximately 6–10 weeks from date of receipt.
- ✓ **Controllers MUST be installed by a California State licensed contractor with the CSLB license number provided on the application.**
- ✓ **New State Law - permit numbers are now required to be submitted on applications for central furnace rebates in order for the rebate to be paid.**

Multifamily Rebate Program

- Qualifying Products and Rebates:
  - ✓ ENERGY STAR® Natural Gas Storage Water Heaters - $30
  - ✓ Pool Heaters - $2.00/MBtu
  - ✓ Central System Natural Gas Water Heaters - $500
  - ✓ Natural Gas Water Heater and/or Boiler Controllers - $700 - $1400
  - ✓ Central System Natural Gas Boiler - $1500
    (May be Water/Space Heating, or Water Heating only)

Multifamily Rebate Program

- Tankless Water Heater Rebate (POS)
  - ✓ **$300 rebate for models that meet a minimum Energy Factor (EF) of .82-.89.**
  - ✓ **$400 rebate for models that meet a minimum Energy Factor (EF) of .90 or greater.**
  - ✓ **Rebate available through December 31, 2013.**
  - ✓ Must be replacing a conventional storage (tank-type) water heater in individual apartment units.
  - ✓ This offer is provided by participating tankless water heater manufacturers through licensed contractors. The application is valid and redeemable only through participating manufacturers and only for qualifying tankless water heaters.
  - ✓ For a list of participating manufacturers, visit socalgas.com and search “MULTIFAMILY.”

SoCalREN

- The REN also expects to be providing water-energy nexus programs. Details are TBD.

Commercial, Agriculture and Industrial Programs

- Rebates
- Custom Calculated:
  - $1/therm
  - For Engine
    - pump testing
    - Rebuild
    - replace

Name Address

Customer:

RESULTS

	PRE CONDITION 11/16/2010	POST CONDITION 7/14/2011
Engine Speed (RPM)	1006	950
Pump Speed (RPM)	1760	1663
Water Flow (GPM)	1630	1739
Total Head (Feet)	354	401.35
Water Horse Power (hp)	145.71	176.25
Engine Shaft Horse Power (hp)	243.75	233.19
Pump Efficiency (%)	59.78%	75.58%
Input Thermal Horse Power (hp)	1,014.54	875.72
Engine Efficiency (%)	24.03%	26.63%
Combined Engine, Pump EFF	14.36%	20.13%
BTU/BHP - hr	10,593.00	9,557.32
THERMS per ACRE FT per 100 FT LIFT	24.30	18.50
Fuel Improvement (% Savings)	9.78%	
Overall System Improvement (%)	40.13%	

West Kern MWD

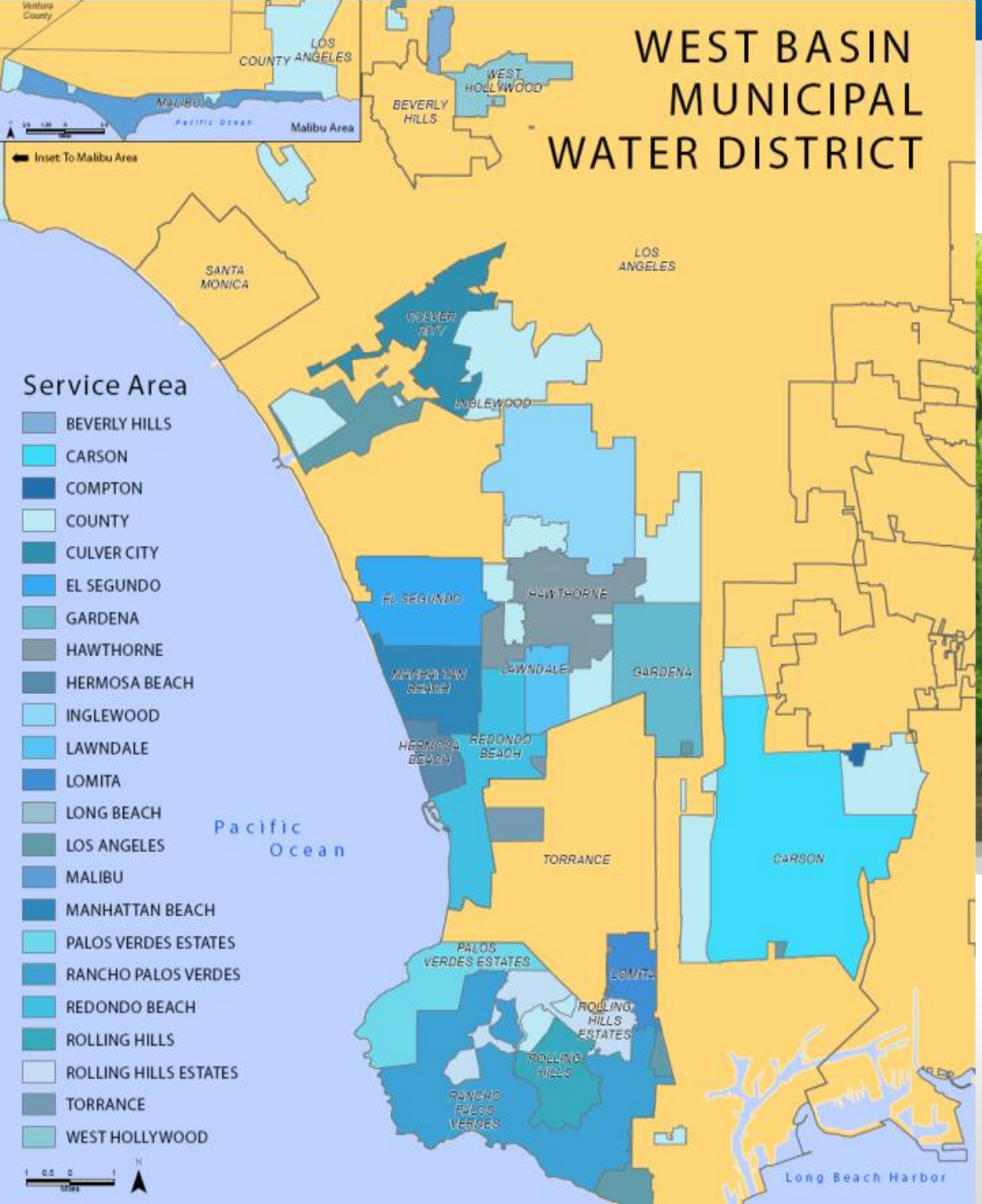
Eastern MWD Mills Booster Pump

Financing

- On-Bill Financing
  - 0% Interest
  - Unsecured
  - $5,000 - $100,000
  - Up to 5 years
- Pilots

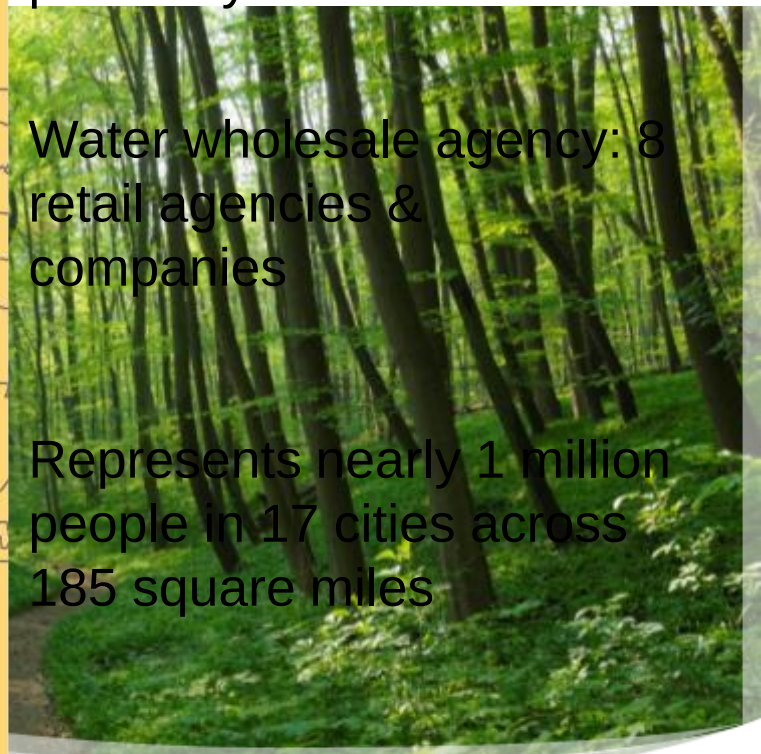
Cash for Kitchens: Parallel Implementation with West Basin Municipal Water District

Target: Commercial Food Service Sector



Governed by a 5-member publically elected Board

Glad to be of service.®



Water wholesale agency: 8 retail agencies & companies

Represents nearly 1 million people in 17 cities across 185 square miles

Provides imported water, recycled water, water efficiency and education programs to businesses and residents

In the beginning….

- In 2009, West Basin was awarded a grant from the Metropolitan Water District
- Materials and implementation strategy designed to help commercial kitchens save water and water-related energy
- Collaboration with local government partnership the South Bay Environmental Services Center (SBESC)
- First audits for target group of large commercial kitchens

Cash for Kitchens provides:

- ✓ Free water-use surveys
- ✓ Training for commercial kitchen management and staff
- ✓ Free devices to replace inefficient, qualifying equipment including: pre-rinse spray valves (PRSV), flow restrictors and waterbrooms.

Program Implementation

- Customers targeted through multiple channels including door-to-door campaigns, Chambers of Commerce and cold calling
- Walk through water assessment of faucets, dishwashing operations, cleaning and food preparation to identify areas for improvement
- Devices distributed to replace older, inefficient equipment

- “Train the trainer” sessions conducted for management to help them address inefficient use of equipment
- Bi-lingual collateral materials left behind with management to encourage behavior changes
- Information provided for enhanced incentives for higher-cost equipment such as ice machines and food steamers.

And then there were three…

In 2010, through the SBESC partnership structure, discussions began with the managers from the So Cal Gas, Commercial Service Technician (CST) team to explore the addition of energy audits to the program.

West Basin and SBESC staff attend CST meetings talking about the benefits of the collaboration and to develop a framework to allow for parallel program implementation

Benefits of Collaborating

- Customers receive benefit of a combined water and energy audit.
- CST performs free testing of gas-using equipment and ensures appliances are operating at maximum efficiency levels.
- Visits must be scheduled with a minimum of one-week lead time

Program Results

- Over 230 Cash for Kitchens visits to date
- 70% of these have been a combined water/energy audit with SBESC staff and SoCalGas CSTs.
- 500+ devices have been distributed saving an estimated 23 million gallons of water.

Pre-Rinse Spray Valve/Water Cost Cost Calculation

Courtesy of Pacific Gas and Electric Company
Food Service Technology Center
fishnick.com

	New Device	Old Device
Spray Valve Performance and Use:		
Water Flow Rate: (gal/m)	1.28	3.50
Operating Hours per Day: (h/day)	3.0	3.0
Operating Days per Year: (d/year)	365	365
Water Heating Performance and Costs:		
Water Heater Fuel Type:	Gas	Gas
Water Heater Efficiency: (%)	70.0	70.0
Temperature Rise through Heater: (°F)	70	70
Gas Cost: (Therms)	$1.000	$1.000
Water and Sewer Costs: (per CCF)	$5.00	$5.00
Results:		
Annual Water Consumption: (gal)	84096	229950
Annual Water Consumption: (CCF)	112.4	307.4
Annual Water Heating Energy: (Therms)	701	1915
Annual Water and Sewer Cost:	$562.00	$1537.00
Annual Water Heating Cost:	$700.52	$1915.48
Total Annual Cost:	**$1262.52**	**$3452.48**

Next Steps…

- Direct install of devices rather than distribution only pending grant funding application
- Reinstatement of PRSV to regional rebate program lists: newer models save more
- Regional implementation outside West Basin service area: share collateral materials and implementation strategy with other water agencies interested in outreaching to food service sector

Water and Energy Nexus

The Metropolitan Water District of Southern California

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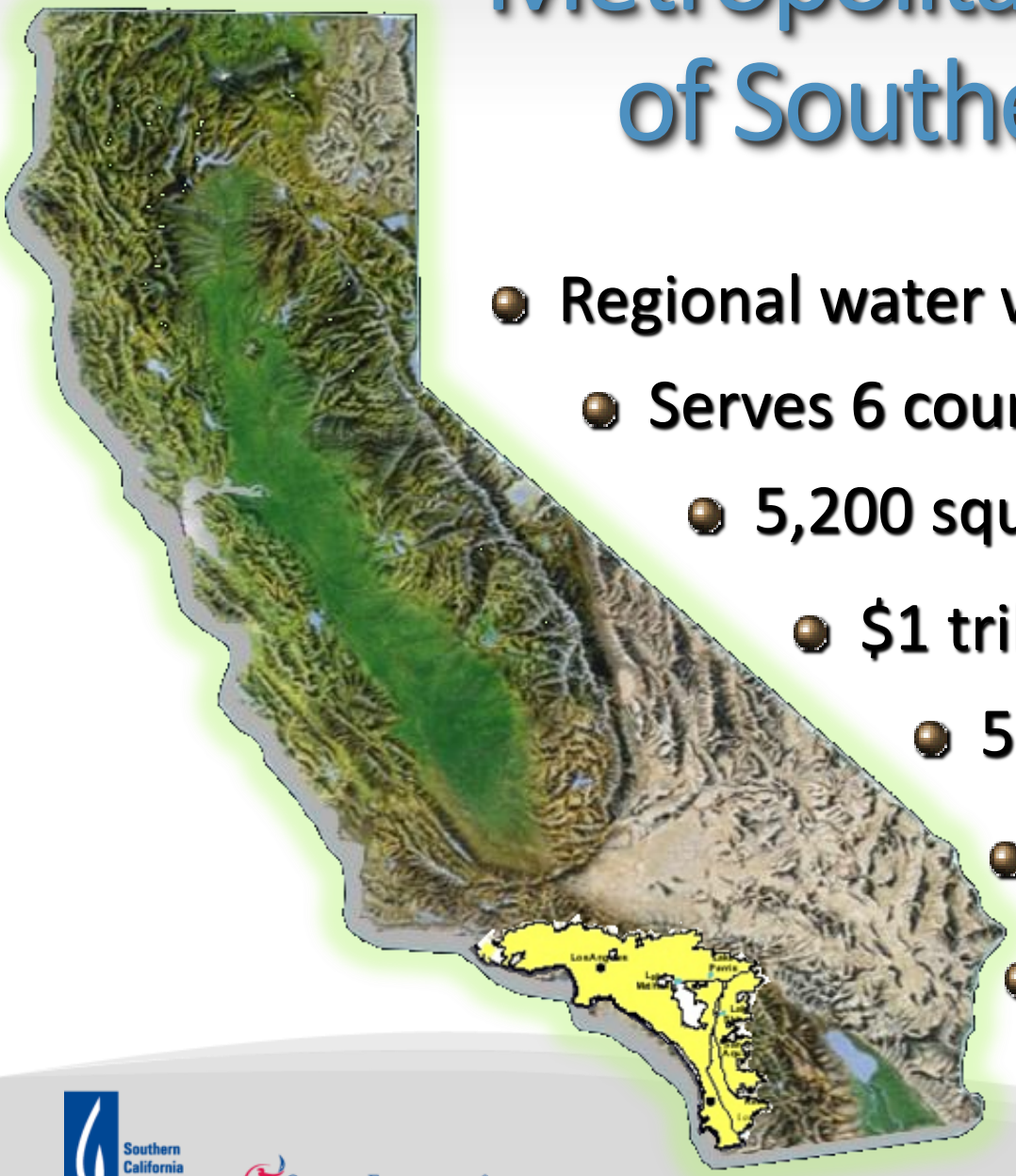
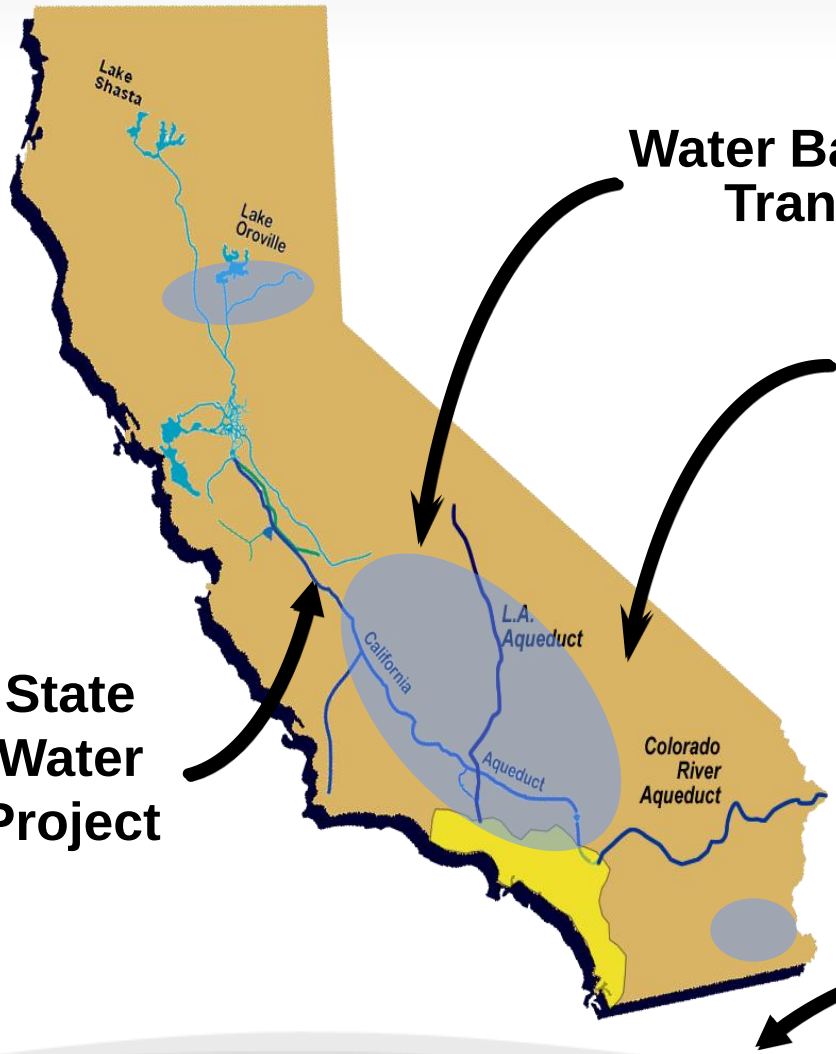
Metropolitan Water District of Southern California



- Regional water wholesaler
  - Serves 6 counties, 19 million people
    - 5,200 square mile service area
      - $1 trillion regional economy
        - 50%+ of region's supply
          - 150,00 people added/yr
          - 1.7 billion gallons/day

Where Southern California Gets its Water



Water Banking / Exchanges Transfers & Storage

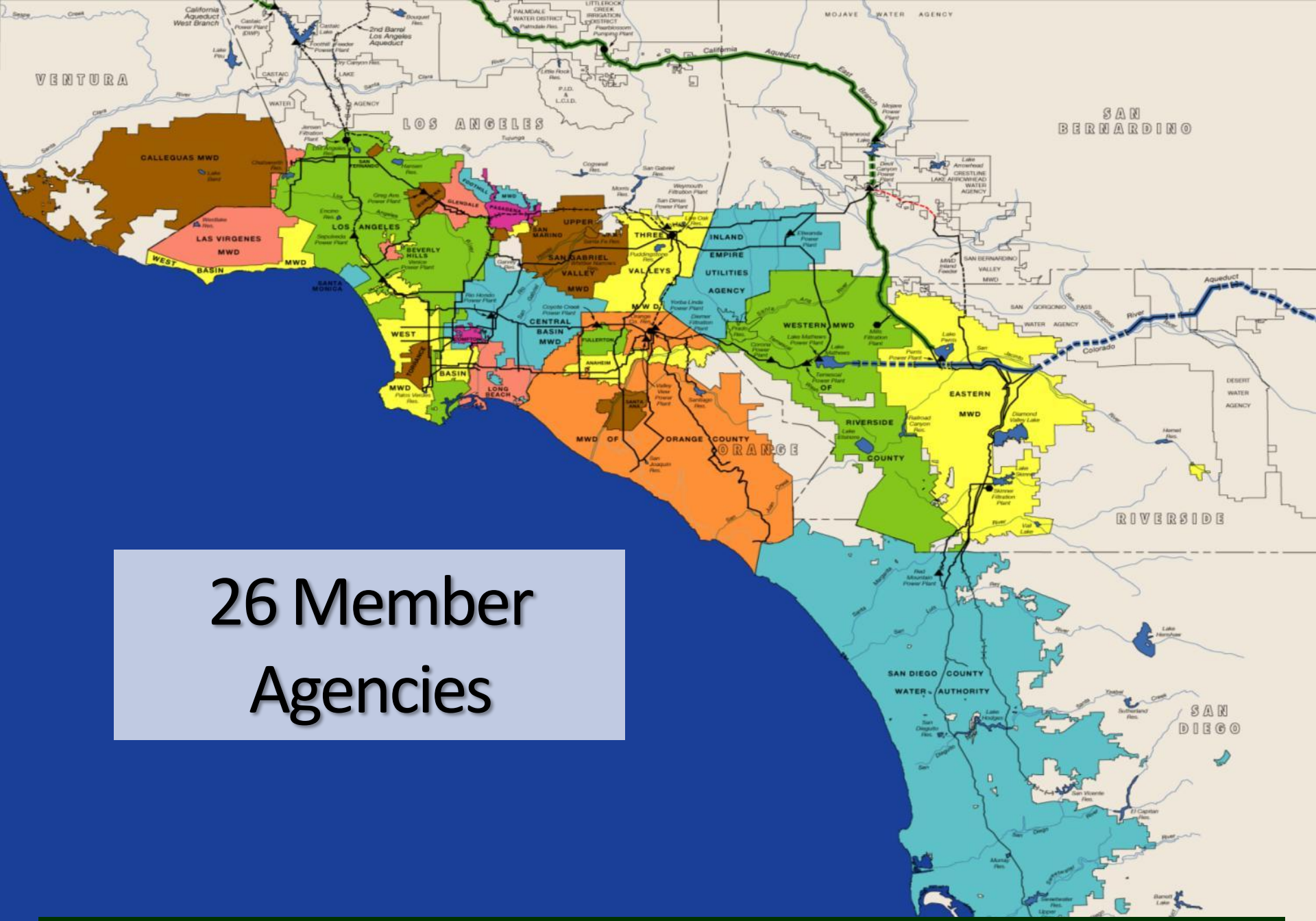
Local Supplies LA Aqueduct (Local)

Colorado River Aqueduct

State Water Project

Conservation, Recycling, Groundwater (Local)

Average Rainfall = 15 inches per year



26 Member Agencies

Average Rainfall = 15 inches per year

Metropolitan Member Agency Water Districts

- Calleguas
- Central Basin
- Eastern
- Foothill
- Inland Empire
- Las Virgenes
- Orange County
- San Diego
- Three Valleys
- Upper San Gabriel Valley
- West Basin
- Western

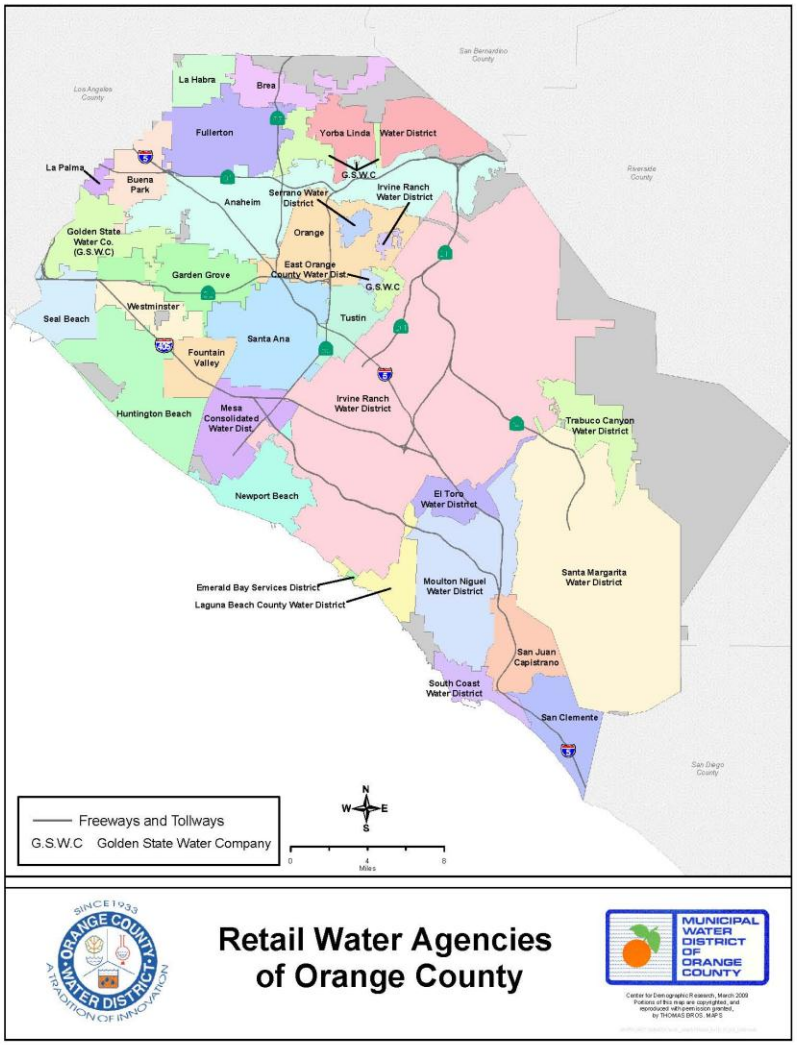
Metropolitan Member Agency Cities

- Anaheim
- Beverly Hills
- Burbank
- Compton
- Fullerton
- Glendale
- Long Beach
- Beverly Hills
- Burbank
- Los Angeles
- Pasadena
- San Fernando
- San Marino
- Santa Ana
- Santa Monica
- Torrance

Municipal Water District of OC

Cities

- Brea
- Buena Park
- Fountain Valley
- Garden Grove
- Huntington Beach
- La Habra
- Orange
- Newport Beach
- San Clemente
- San Juan Capistrano
- Seal Beach
- Tustin
- Westminster
- Yorba Linda



Water Districts

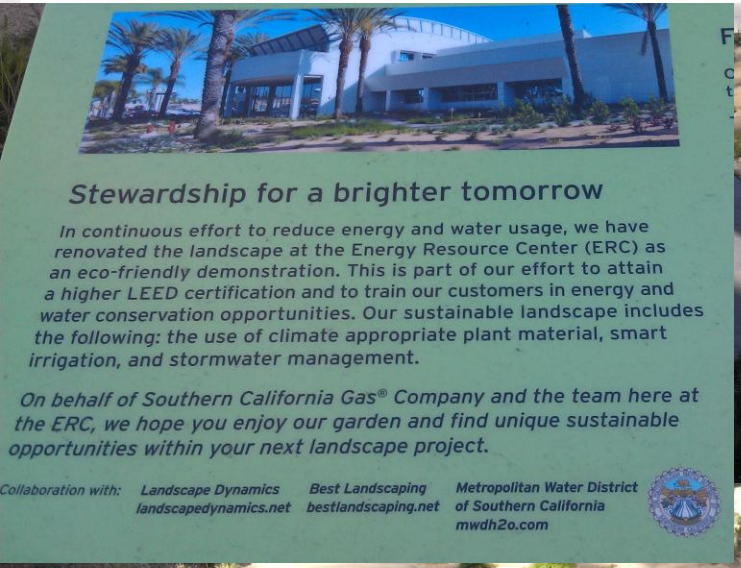
- EOCWD
- El Toro
- Emerald Bay
- Golden State
- IRWD
- Laguna Beach County
- Moulton Niguel
- OCWD
- Santa Margarita
- Serrano
- South Coast
- Trabuco Canyon

Water and Energy Nexus with SoCalGas

- Partnering More than Ten Years
- Residential Washer Program
- Savings by Design
- Panel on MWD Innovative Conservation Program
- CII Customer Recognition Awards
- Food Service Expo
- Gas Co Business Expo
- Monthly Water Use Efficiency Meetings
- Co-Marketing Pieces and at ERC
- Water Savings Incentive Program
- Restaurant Vendor Program
- Green Team
- School Symposiums
- Program for Resource Efficiency in Private Schools (PREPS)
- Restaurant Training
- Cooling Tower Classes
- Energy Resource Center Landscaping
- Landscaping Workshops
- Co-Presenting at WaterSmart 2013

Energy Resource Center Landscaping - Then

Energy Resource Center Landscaping - Now



Energy Smart Landscape Series

HEALTHY SMART LANDSCAPES: SESSION 2 COMMERCIAL LANDSCAPING, HOTELS AND RETAIL CENTERS

WEDNESDAY, SEPTEMBER 26, 2012
(Seminar #27113)

TIME: 9 A.M. - 12 P.M.
(8:30 a.m. check-in & continental breakfast)
Lunch will be provided

NO COST TO ATTEND

LOCATION:
Southern California Gas Company's Energy Resource Center
9240 Firestone Blvd.
Downey, CA 90241

Co-sponsored with: Metropolitan Water District

Strategies to help improve the health of your guests and environment

Your landscapes must do more than just look good. They must also be good for your guests, finances and environment. In this unique seminar, you will have the opportunity to learn and discuss strategies that can reduce energy and maintenance costs while improving the health and satisfaction of your guests. Combining the science of energy efficiency with restorative landscape this seminar will be a dynamic learning experience. Also, learn about water conservation in Hotel and Commercial Landscaping.

Offering training and seminars is just one way Southern California Gas Company (SoCalGas®) is helping our customers manage their energy use to save money and energy.

This seminar is for:

- Facility Engineers
- Landscape Operators
- Property Management Companies
- Retail Building Owners
- Apartment Building Owners
- Golf Course and Country Club Facility Engineers

Attend if you want to:

- Reduce energy and maintenance costs
- Learn the types of plants most beneficial to humans
- Discuss the design elements that produce landscape satisfaction
- Discover strategies that help landscape professionals make these changes

Learn from the experts:

Douglas Kent has authored four landscaping books and over 50 articles, teaches at a variety of colleges and has clients throughout the state. Kent's presentations are as informative and professional as fun and fast paced.

Bill McDonnell leads MWD's (Metropolitan Water District) water conservation efforts in the commercial and industrial sectors and represents MWD in variou forums on matters concerning the interrelationships of California's water and energy resources and infrastructure.

If you have specific questions regarding our energy-efficiency programs and related rebates, contact your representative from SoCalGas or call 1-800-GAS-2000. For information on exhibiting and/or speaking opportunities

Southern California Gas Company
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Energy Smart Landscapes Series: Ocean Friendly and Organic Gardening

» Register to attend this seminar

Save the Date: Tuesday, June 12, 2012
9:00-12:00pm, 8:30am check in and continental breakfast
Energy Smart Landscapes Series: Session 1, Design and maintenance Strategies for Leaner and Greener Landscapes

Gas Company A Sempra Energy utility

Southern California Gas Company
A Sempra Energy utility®

ENERGY SMART LANDSCAPES: SESSION 3, STRATEGIES TO CUT ENERGY AND ECONOMIC COSTS WHILE IMPROVING LANDSCAPE SATISFACTION

WEDNESDAY, DECEMBER 12, 2012
(Seminar #28157)

TIME: 9 A.M. - 12 P.M.
(8:30 a.m. check-in & continental breakfast)
Lunch will be provided

NO COST TO ATTEND

LOCATION:
Southern California Gas Company's Energy Resource Center
9240 Firestone Blvd.
Downey, CA 90241

Co-sponsored with: Metropolitan Water District

Energy Smart Landscape Series: Session 3: Schools, Colleges and Universities

Big properties, big costs and big opportunities - modern landscapes must provide positive experiences and be environmentally effective, they must be aesthetically beautiful and energy efficient. Along with tips on improving an individual's landscape experience, this seminar will teach how to maximize economies of scale to minimize energy and economic costs on large properties. The morning will also include an inspiring presentation on regional water conservation and tour of ERC's landscape.

Offering training and seminars is just one way Southern California Gas Company (SoCalGas®) is helping our customers manage their energy use to save money and energy.

This seminar is for:

- University, Community Colleges, K-12, and Private School Facility Directors
- Architects
- Engineers
- Water Efficiency Specialists
- Landscape Architects
- Irrigation Specialists
- Urban Designers
- Arborists
- Biologists

Attend if you want to:

- Reduce energy and maintenance costs
- Learn about lawn alternatives and removal methods
- Study landscape strategies that increase feelings of wellbeing
- Create landscapes that are good for the buildings, environment and people

Learn from the experts:

Douglas Kent has authored four landscaping books and over 50 articles, teaches at a variety of colleges and has clients throughout the state. Kent's presentations are as informative and professional as fun and fast paced.

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Landscaping Efficiency or Inefficiency You Can See

Landscaping Inefficiency You Can See

Landscaping Efficiency You Can See

Future Collaboration

- » Water Savings Incentive Program (WSIP)
  - Encourage custom projects
  - Agricultural
  - Industrial
  - Large Landscape
  - Commercial
- » SoCalGas
  - Promoting to Customers
  - Through Account Reps
  - Bringing hot water customers to program

Future Collaboration

- Energy Smart Landscape Workshops
- Maintenance Training, July 24th
- Colleges and Universities, October 23rd

Future Collaboration

» WaterSmart Innovations

» **Energy Smart Landscape Workshops "Yes Energy Smart"**

Future Collaboration

- Helping Cities Create Water/Energy Nexus
- City of South Pasadena
  - Hospitals
  - Schools
  - Laundry

Contact Information

Bill McDonnell

213-217-7693

bmcdonnell@mwdh2o.com

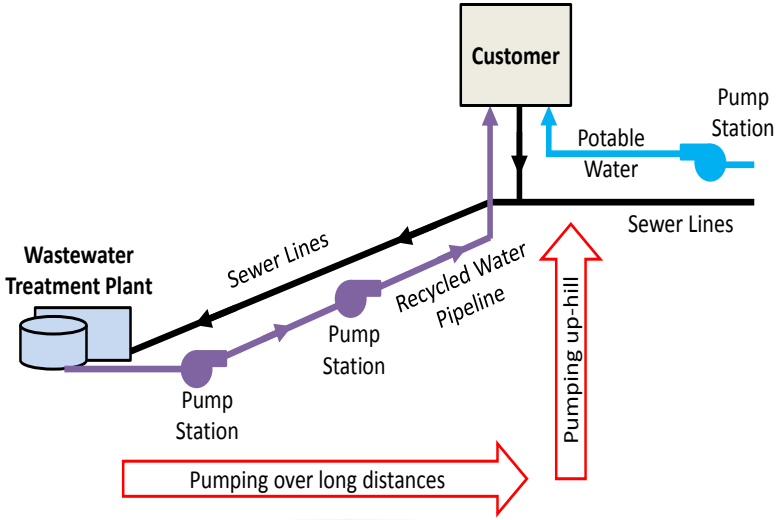
(back to SoCalGas)

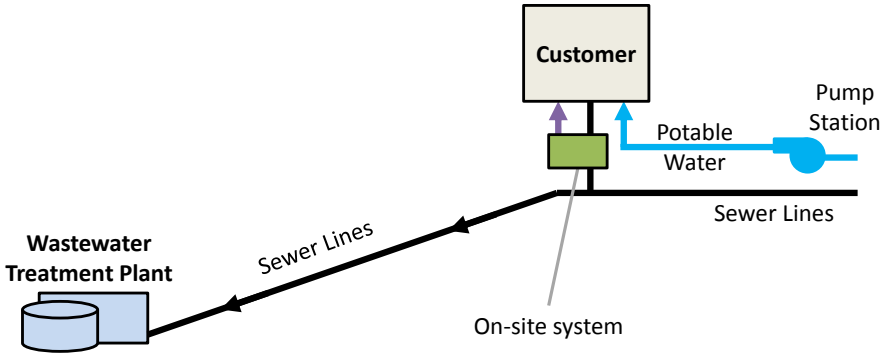
Pre-2013 Activity – Third Party

- 3rd Party Programs – Alliance

  (http://sustainca.org)

  - Onsite Water Generation





Pre-2013 Activity -- SCG Study

» **Study methodology**

- Identified largest water & wastewater customers (excluded natural gas used to produce electricity)
- Collected water data that corresponded to the natural gas data (obtained meter level for 3 years, where available)
- Computed energy intensity by meter, if possible; higher levels if corresponding water data not provided at meter level
- Mapped natural gas usage to segments of the water use cycle for 16 agencies
- Prepared natural gas profiles focused on 16 agencies (*similar to CPUC Study 2, except that Study 2 focused on time-of-use electricity and did not include upstream & downstream map of agency relationships*)
- Input natural gas and corresponding water data for CY2010 to an Excel spreadsheet

SCG Natural Gas Average Energy Intensity

SCG Natural Gas Average Energy Intensity			
	Potable	Recycled	Waste Water
Minimum	0.14	5.36	10..52
Maximum	271.03	12.65	44.13
Average	31.75	1.0	3.04

Therms/AF

2013 – 2014 Plans -- SoCalGas

- RFP for Leak Detection and Pressure Management
- Other? Additional Research?

RFP for Natural Gas Leak Detection/ Pressure Management

- Natural Gas Engine Leak Detection/ Pressure Management
- Leveraged CPUC Study 2 and Internal SCG Study
- Agency Load Profiles
- Calculate Therms/AF

Other Possible Research (Tentative Topics):

a) Closed Loop Cooling Towers
b) Water Use Efficiency (irrigation, recycled water, onsite water treatment)
c) Waste Water Treatment Plants
d) Ground Water Recharge
e) Sustainable Landscape

More Possibilities…

- Researching Flood Irrigation to Drip irrigation EE measure in AG programs

And More Possibilities….

- Calculated Water Engineering support with MWD
- Water Efficiency Program Development Assistance with Cities through MWD

THANK YOU!!!

Frank Spasaro

Manager, EE Partnerships and Finance

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213-244-3648