

2014 CA-NV AWWA Annual Fall Conference

Water Management and Efficiency Committee

Accommodate Growth While Reducing Demand

**Patrick Costello
City of Napa
October 23, 2014**

City of Napa Water System

- Population Served = 86,000 (more than 60% of County)
- 2 Local Reservoirs
- State Water Project
- 25,000 Connections
- 14-15,000 AF Annual Retail (70% Residential Use)
- Urban Water Supplier subject to "20% by 2020" (SBx7-7)



Napa is World Famous for...

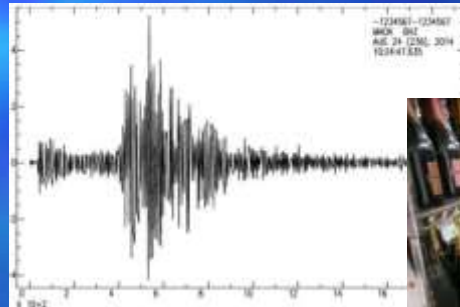
Wine



Food



Earthquakes



Water Offset Program for New Development



New Development requires Water !



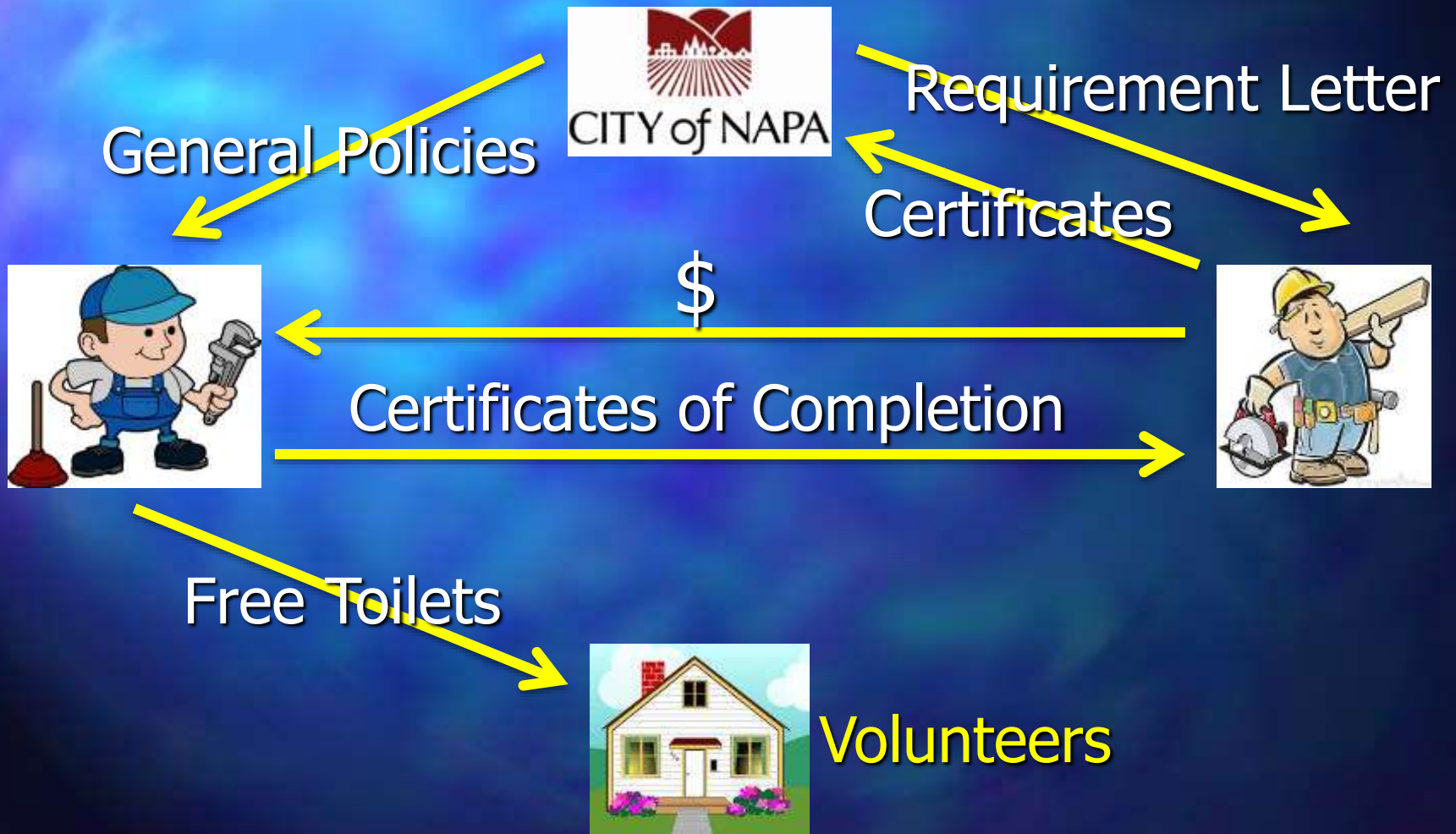
City of Napa Water Offset Origins in Drought

Multi-Year Drought 1987-1992

- Community Task Force
 - Avoid Building Moratorium
 - Avoid Harm to Landscape Industry
 - Take advantage of new Ultra-Low-Flush Toilets (1.6 gpf)
- 1991→ New development offset its annual water requirements via **offsite** toilet replacement in existing **homes**: 3.5, 5, 7 gpf → 1.6 gpf
- 1993: Policy made permanent in
Napa Municipal Code Chapter 13.09



"Toilet Retrofit Program"



Water Offset Calculation

Estimated Annual Water Use of New Development

- Schedule of Water Use Factors (San Luis Obispo/Napa)
 - e.g., AF/year/1,000 sq.ft., AF/year/dwelling unit

divided by

Estimated Annual Water Savings from Retrofit of an Average Single-Family Home

- 0.073 AF/year = One "Certificate of Completion"

equals

Number of Certificates Required

Certificate of Completion

Must be signed by:

- ☐ Owner (Volunteer)
- ☐ Plumber
- ☐ Developer

Subject to \$10,000
fine if falsified

**CITY OF NAPA RETROFIT PROGRAM
CERTIFICATE OF COMPLETION**

This Certificate of Completion is to be credited to the following retrofit requirement project:

Project Name: _____	Project Number: _____
BP Number: _____	Site Address: _____
Developer: _____	Plumbing Contractor: _____
Address: _____	Address: _____

Please complete the following for the site being retrofitted:

Site Address: _____	Water Account #: _____
Owner's Name: _____	Mailing Address: _____
Owner's Phone Number: _____	

Number of Existing Toilets: _____ Gallons per Flush: _____
Number Replaced or Retrofitted to 1.6 Gallons per Flush: _____
Toilet Location (if part of Non-Residential retrofit): _____

Number of Existing Urinals: _____ Gallons per Flush: _____
Number Replaced or Retrofitted to 1.6 Gallons per Flush: _____
Urinal Location (if part of Non-Residential retrofit): _____

Brand/Model of Toilets or Urinals Installed: _____

Number of Existing Showerheads: _____ Number Replaced: _____
Number of Existing Interior Faucets: _____ Number of Aerators Installed: _____

If all existing showerheads were not replaced, or if aerators were not installed in all interior sink faucets, Please Explain: _____

I, _____ (print name), do hereby certify that I am the owner of the property listed above, and that the work described on this Certificate has been completed to my satisfaction, and that all toilets at this location are WaterSense Labeled High-Efficiency Toilets (HET) and all urinals at this location are 1-gallon per flush.

Signature: _____ Date: _____

I declare under penalty for perjury that the information stated above is true and complete to the best of my knowledge. I realize that I am subject to a \$10,000 fine as stated in City Ordinance #4305.

Signature of Developer/Authorized Agent/Representative: _____ Date: _____

Signature of Plumbing Contractor (or person doing the work): _____ Date: _____

Number of toilets or urinals received at the City of Napa Corporation Yard: _____ Date: _____

Received By: _____

This Certificate is hereby accepted and may be applied to the project identified herein.

By: _____
Water Division

City Perspective



- Promote Program to Water Customer Volunteers
 - Past: Provided Volunteer Lists to Plumbers
 - Recent: Provide Plumber List to Volunteers
- Establish *General Policies for Participating Plumbers*
 - Minimum specs on replacement toilet, Certificate value, etc.
- Accept old toilets at Corporation Yard
- Provide Water Offset Calculation, Letter of Requirement to Developers
- Accept Certificates or In-Lieu Fee and Approve Occupancy of New Development



Volunteer Perspective





- Agree to allow all of their high-water use toilets to be replaced with new efficient models – For **FREE!** (including labor and old toilet disposal)
 - Must pay for extra services (e.g., damage repair, color toilet)
- **Sign Certificate of Completion**

A Sweet Deal!

- Alternative Program:
 - \$100 Rebate from Wastewater Agency

Plumber Perspective



- Replace all high-water use **toilets** at volunteer property with new efficient models at no charge
 - May charge for special services (e.g., damage repair, etc.)
- Replace high-flow **showerheads** and faucet **aerators** with new efficient fixtures  
- Deliver old toilets (porcelain) to City Corporation Yard
- **Sign Certificate of Completion**
- **Sell Certificates** to Developers at market price \$

Developer Perspective



- Building Permit Issued
 - Receive official Water Offset **Requirement Letter** from City ("Water Demand Mitigation")
- Prior to Occupancy:
 - **Purchase** required number of Certificates from Participating Plumbers \$
 - Sign Certificates and **turn in to Water Division**
or generate own Certificates to turn in
*or pay \$600/Certificate **In-Lieu Fee** (special cases)*

Program Evolution

2001: Existing **Commercial Facilities** made eligible

- Certificate equivalents established
- quickly replaced 18% of old commercial toilets, led CUWCC CII ULFT Program (10/1/2005)

2010: Plumbers must install **WaterSense HETs**



2011: Schedule of **Water Use Factors** revised

- Reflect **CALGreen**, **WELO** Standards for new development

Program Exceptions

Nominally 1:1 Offset Ratio, **but:**

- New **Affordable Housing** Development



➤ EXEMPT by Code

- New **Commercial** Development

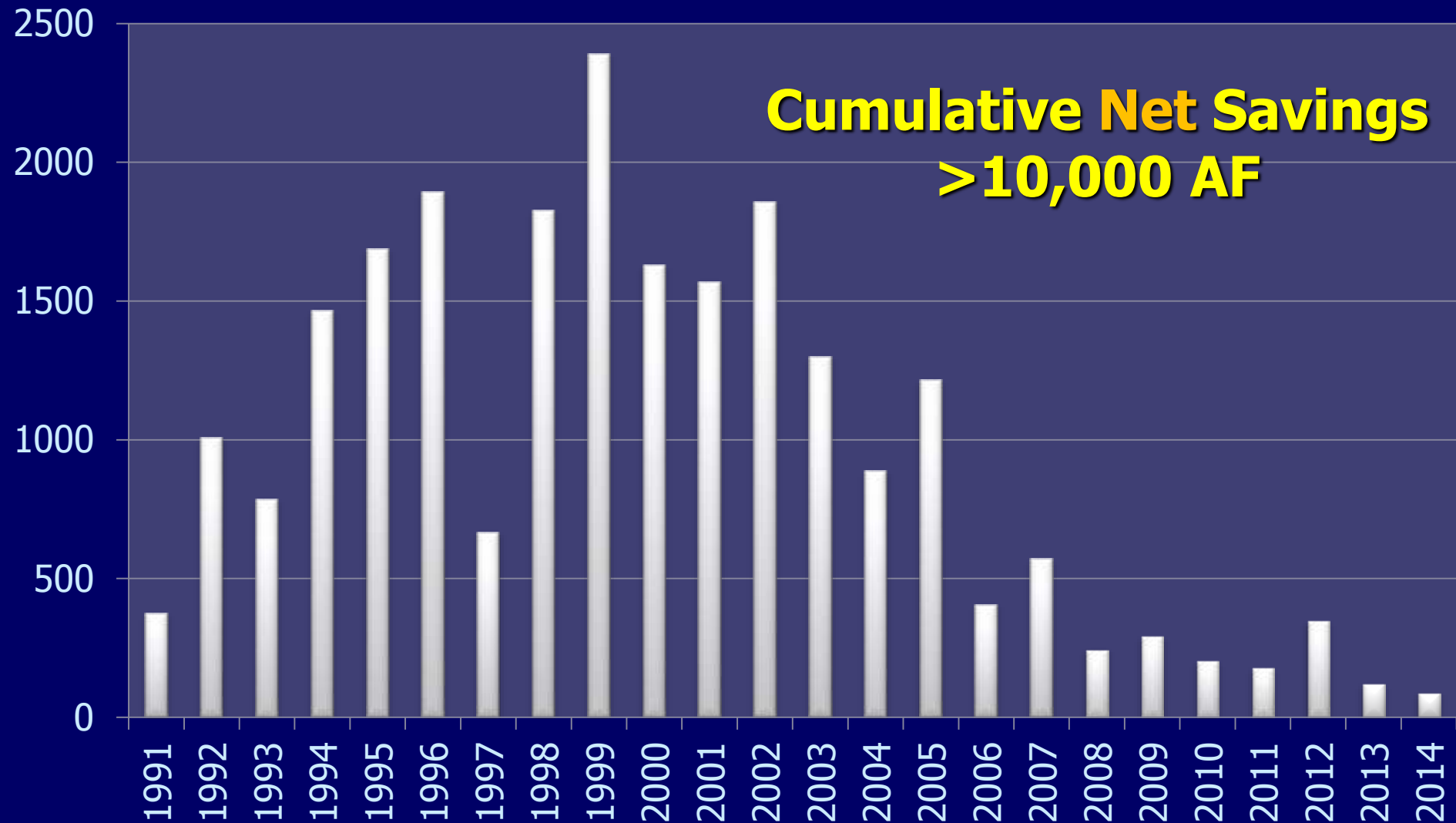


➤ 50% Discount
(policy decision)

Program Results

23,000 Toilets Replaced

**Cumulative Net Savings
>10,000 AF**



Program Accelerates Adoption of New Technology



Pre-1992 ≥ 3.5 gal per flush (gpf)
Ultra-Low-Flush (ULFTs) = 1.6 gpf

- **Today: High-Efficiency (HETs)**
<1.28 gpf



Pre-1992 ≥ 3 gal per minute (gpm)
1990's-2000's = 2.5 gpm

- **Today: <2 gpm !**

good-performing
(Green Building Code)



No aerator: ≥ 5 gal per minute (gpm)
Typical aerator: 2.2 – 2.5 gpm



- **Today: ≤ 1.5 gpm aerators**
(Green Building Code)

Alternative Offset Method #1

Napa Valley Unified School District (2007) Waterless Urinal Project

- 207 Falcon WaterFree Urinals Installed
- 4 million gallons annual savings
- Generated equivalent of **184 Certificates**
 - Offset portion of new housing development



Project feasible thanks to Green School Rebate
+ City Offset Certificate Sales

Alternative Offset Method #2

Napa Valley Commons (2012) Recycled Water Conversion

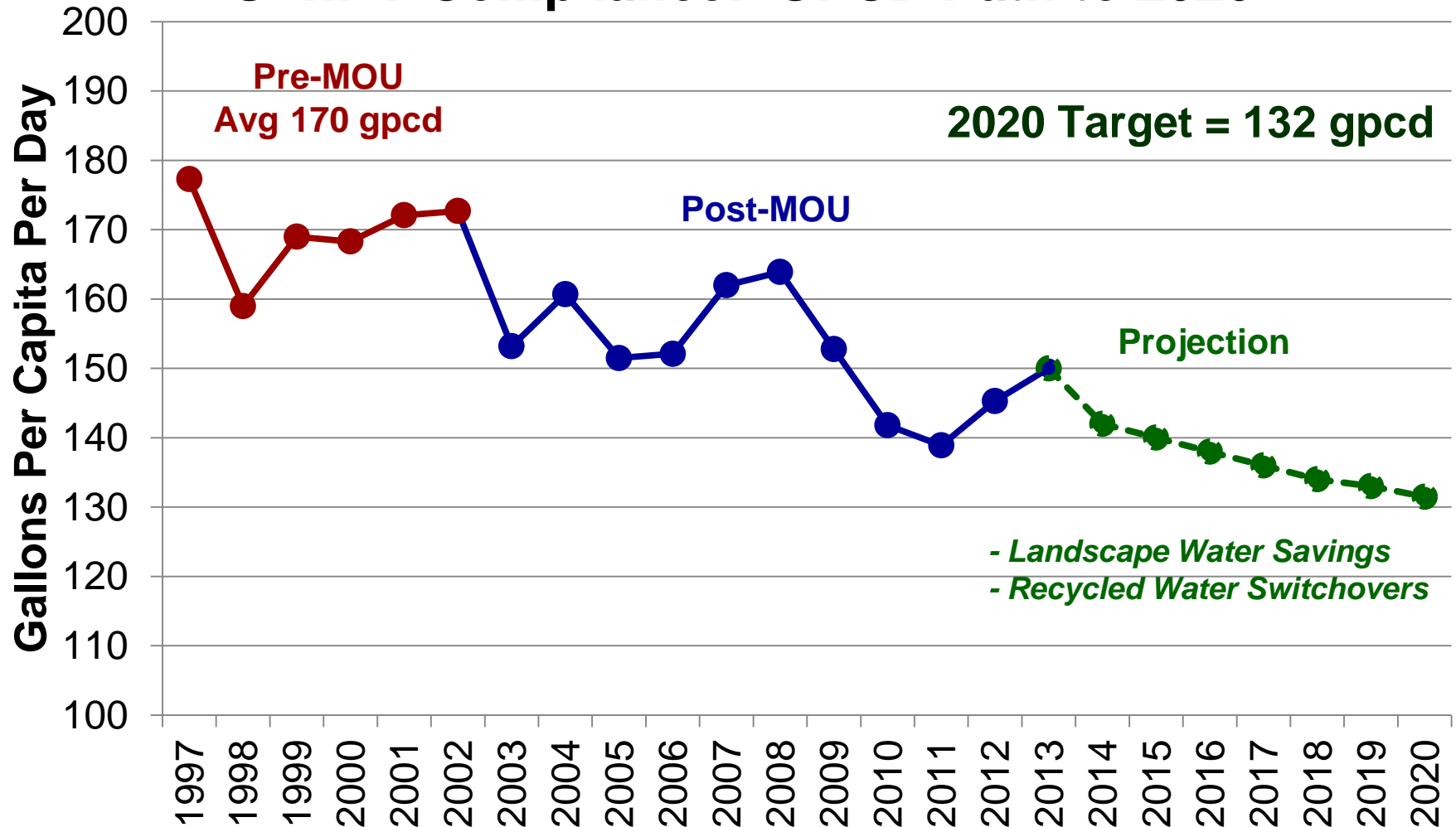
- Corporate Park switch to Recycled Water
- >47 AF annual savings
- Generated equivalent of **647 Certificates**
 - Offset new housing, restaurant, health club, and hotel development projects by 2015



Project feasible thanks to City Offset Certificate Sales

Long-Term Trend

SBx7-7 Compliance: GPCD Path to 2020



Water Offset Program at a Crossroads

- Dwindling number of eligible 3.5+ gpf toilets
 - Natural replacement with HETs; California SB 407
- # of Participating Plumbers: 8, 7, 4, 3, 2, 1, 0?
- **Options Going Forward:**
 - Replace 1.6 gpf ULFTs with **0.8 gpf** HETs ?
 - **Fee Only** – to fund broad array of water-saving programs (rebates)? AB 1600 conflict?
 - End Offset Policy?

Timely Industry Research



Net Zero Water Use Literature Search and Case Study Documentation August 2014

**Draft Paper Posted for Comment
until November 1, 2014:**

<http://a4we.org/water-offset-draft.aspx>

Contact Information

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