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From Report to Reality; One Agency's Delayed Success Story

WaterSmart Innovations Conference and
Exposition

October 6, 2010

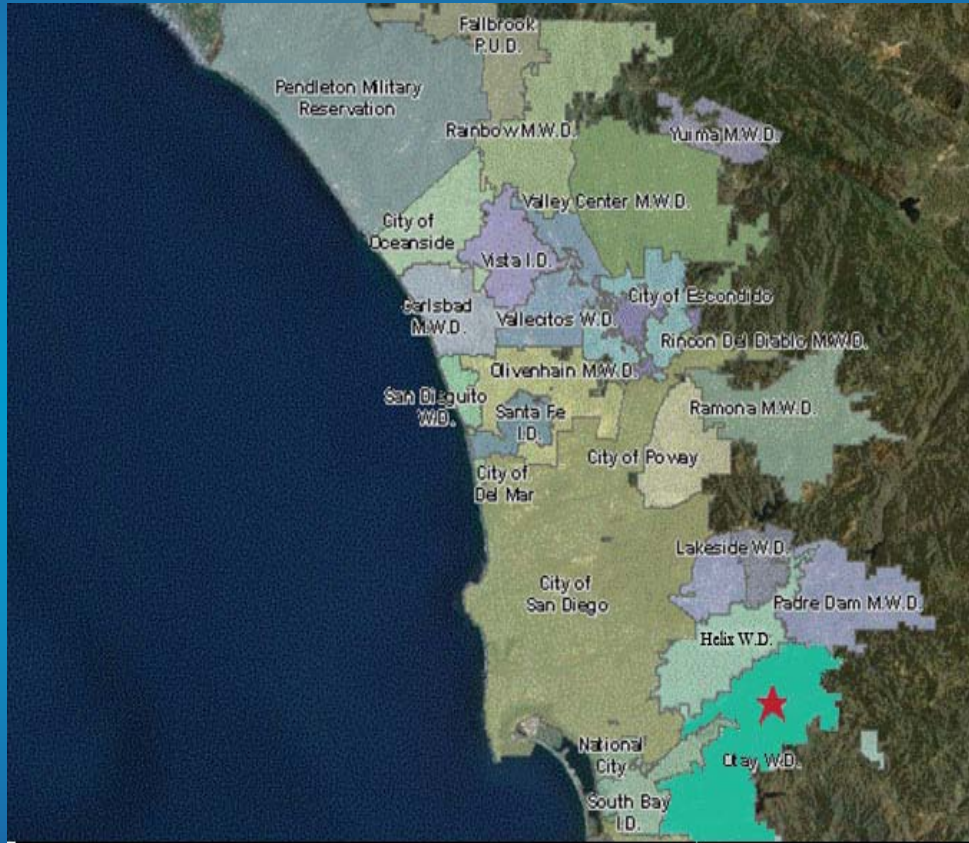
Rhianna Pensa, Water Conservation Specialist
Otay Water District



The Otay Water District



About the Otay Water District



- ◆ Established in 1956 as a California Special District
- ◆ Governed by elected five member Board of Directors, serving five divisions
- ◆ 125.5 square mile service area with 206,000 customers in San Diego County including Spring Valley, Rancho San Diego, Jamul, La Presa, eastern Chula Vista and Otay Mesa



Otay's Customer Classes & Percent of Total Sales

- ◆ **40,992 Single Family Accounts; 51% Total Sales**
- ◆ **3,421 Multi-Family Accounts; 11% Total Sales**
- ◆ **1,432 CII Accounts; 12% Total Sales**
- ◆ **1,884 Irrigation Only Accounts; 23% Total Sales**



Why is Otay Focusing on CII Accounts?

- ◆ **SANDAG's projected growth in Otay's service area**
- ◆ **Water shortage declaration**
- ◆ **State mandate to reduce**
- ◆ **CUWCC BMP compliance**
- ◆ **CII funded audits as a pilot study in June 2005**



Funding the CII Audits

- ◆ **Otay identified top 10 CII users and developed RFP for pilot CII audit**
- ◆ **FY 2005 co-funding with San Diego County Water Authority (CWA)**
- ◆ **Contract awarded to Water Management Incorporated (WMI)**



Otay's Top 10 Commercial & Institutional Water Users: FY 04

Donovan	872 AF*
Bailey	482 AF*
Delimex	86 AF*
Veterans Home	80 AF*
Cuyamaca College	69 AF*
Sharp CV Medical Center	69 AF*
Bonita Vista High School	61 AF*
Southwestern College	46 AF*
Knotts Soak City	21 AF*
Olympic Training Center	11 AF*

**AF= Acre-feet*



The Audit/Report

- ◆ **WMI conducted audits in March 2005**
- ◆ **Report results finalized in February 2006**
facilities selected for the audits :
 - **Donovan (CA state prison)**
 - **Bailey Detention Center (county jail)**



Entire Project Timeline FY 05-06

Mar 2005

WMI hired

June 2005

WMI completes audits and submits draft of final reports for Donovan and Bailey

Feb 2006

Otay, CWA, WMI meet with both Donovan and Bailey to discuss final recommendations

July 2008

Donovan begins retrofit

Nov 2008

Donovan completes retrofit

July 2009

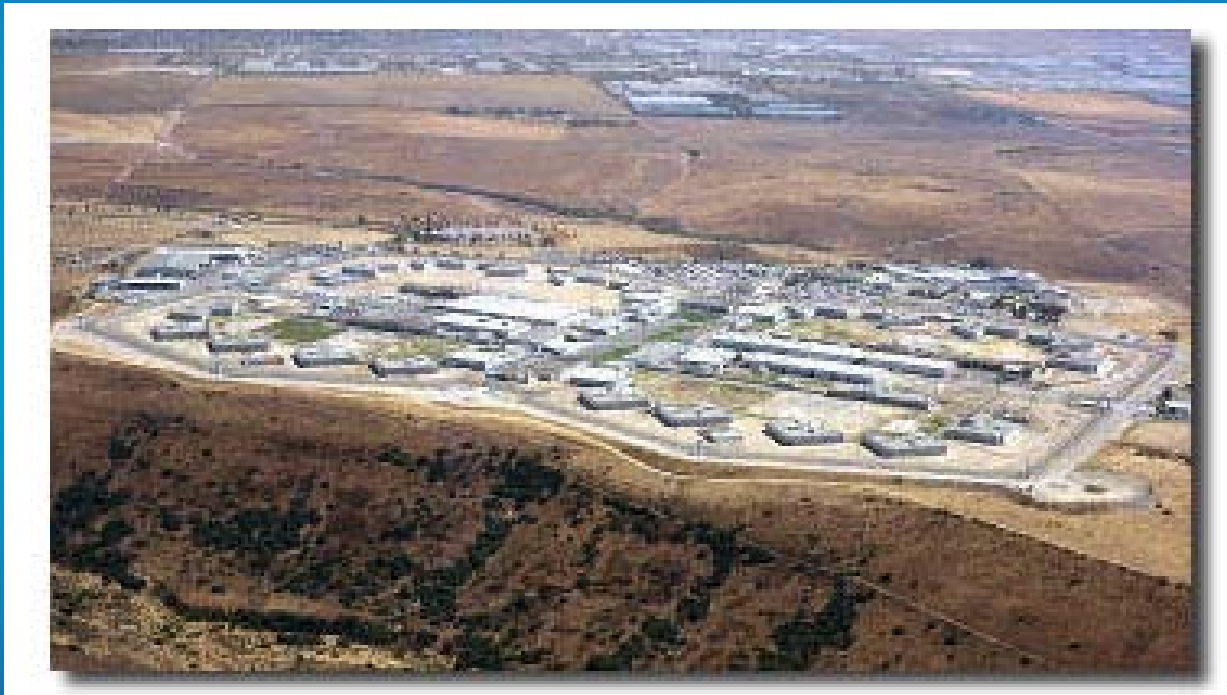
Bailey begins retrofit

Dec 2009

Bailey completes retrofit



R.J. Donovan Correctional Facility *(State of California)*



Donovan

- ◆ **Medium-high custody facility**
- ◆ **4,500 Inmates**
- ◆ **1,300 Staff**
- ◆ **55% of the site's water usage is for inmate bathrooms**



WMI's Recommendations

Measures	Quantity	Gallons/ Year Savings	Annual Savings	Installed Cost	Payback with Incentives
<i>Inmate Bathroom Fixtures – Facility 1-4</i>					
I-CON Electronic Bathroom Controls	2,092	57,834,260	\$421,039	\$1,851,420	4.0
I-CON Electronic Shower Controls	176	13,094,010	\$114,812	\$155,760	1.0
I-CON Electronic Faucet Controls	500	5,840,000	\$51,207	\$442,500	8.3
<i>Inmate Bathroom Fixtures- Facility 5</i>					
Replace commercial toilets	26	1,790,592	\$12,714	\$26,185	1.9
Replace urinal flush valves	4	156,160	\$1,109	\$2,026	1.8
Install flow reducers for faucets	44	78,022	\$554	\$2,577	4.7
<i>Common Area Bathrooms Facility 1-5</i>					
Replace common area toilets	267	2,797,729	\$19,865	\$237,700	10.7
Replace common area urinals	23	468,096	\$3,324	\$9,965	3.0
Replace common area faucet aerators	265	68,270	\$591	\$4,770	8.1
<i>Laundry</i>					
Ozone Laundry System	1	1,750,000	\$38,704	\$151,429	2.8
<i>Kitchen</i>					
Kitchen Pre Rinse Spray Nozzles	8	175,200	\$1,789	\$0	-
Total		84,052,339	\$665,706	\$2,884,331	4.6 years



Measures Implemented- Donovan

Survey Findings	Recommendations	QTY
3.5 gpf toilets, flushing 18 times a day	Electronic Flush Valve Controls Acorn Master-Trol	2,000



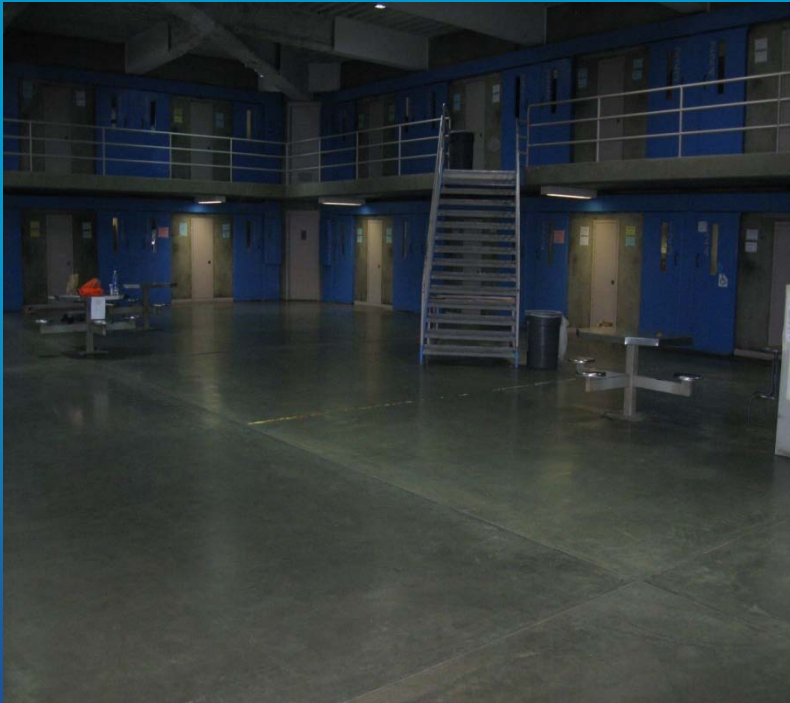
Electronic Plumbing Fixture Controls

- ◆ **Acorn Master-Trol Flush Valve Assemblies**
 - **Electronically controlled**
 - **Flushing limited to 12 flushes per day for each unit**

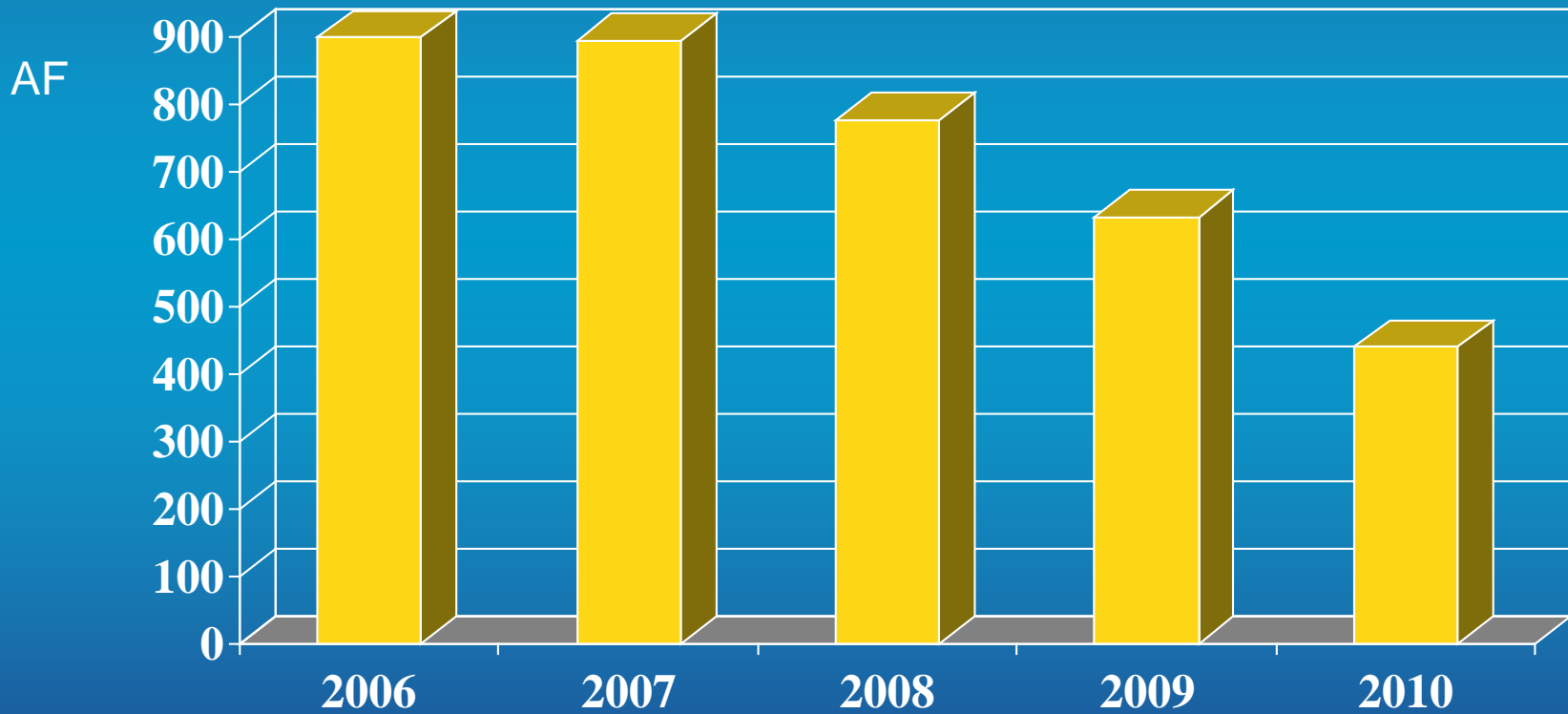


Donovan Timeline

- ◆ **Began retro-fit July 2008**
- ◆ **Completed retro-fit November 2008**



Donovan Water Use CY 2006-2010



George F. Bailey Detention Center & East Mesa Detention Facilities San Diego County



Bailey

- ◆ **Bailey Detention center houses max security prisoners**
- ◆ **1,500 total prisoners**
- ◆ **453 sworn and professional staff**
- ◆ **38% of the site's water usage is for inmate bathrooms**



WMI's Recommendations

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Measures Implemented- Bailey

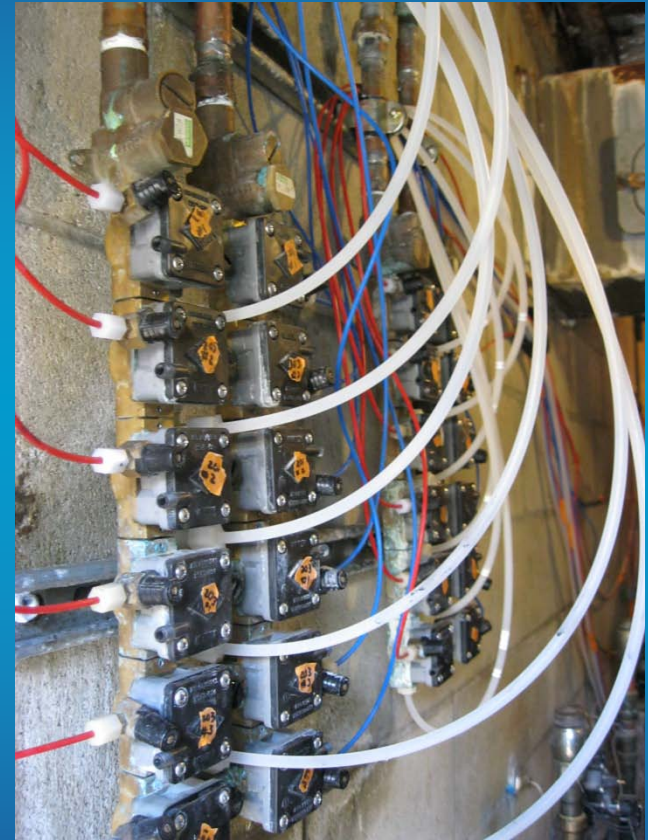
Survey findings	Recommendations	QTY
3.5 gpf toilets	1.28 gpf toilets	40
1.5 gpf Urinal Valve	.125 gpf Urinal Valve	49
2.2 gpm Sink Aerators	1.0 gpm Sink Aerators	51
3.5 gpf Flush Valves	1.6 Electronic Flush Valves ICON	488



Electronic Plumbing Fixture Controls

◆ **ICON**

- **Electronically controlled**
- **Flushing limited to 12 per day for each unit**

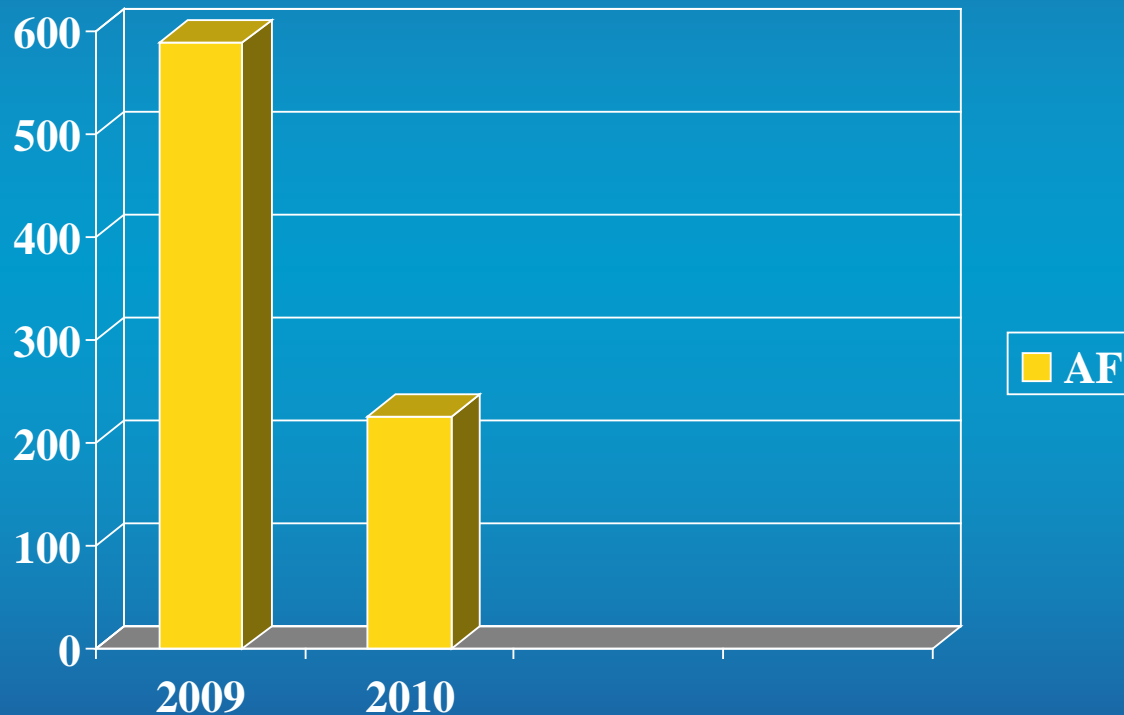


Bailey's Timeline

- ◆ **Began retro-fit July 2009**
- ◆ **Completed retro-fit December 2009**

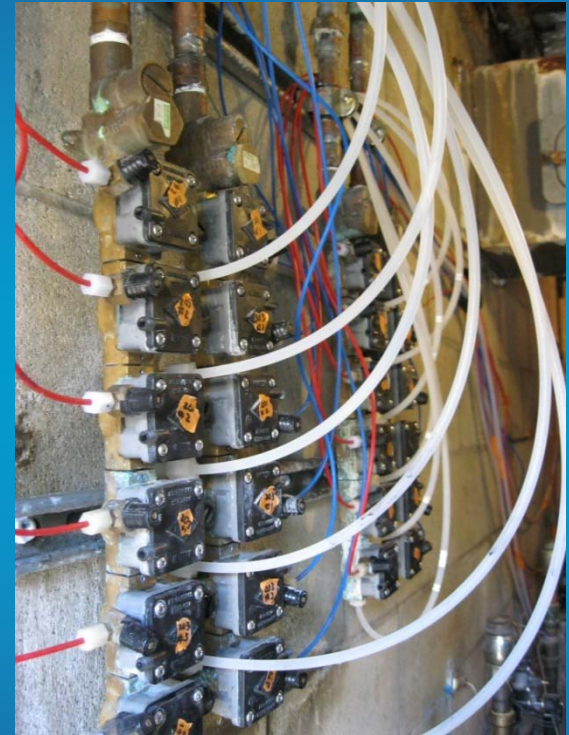


Bailey: 9 Months of CY 2009 vs. 9 Months of CY 2010



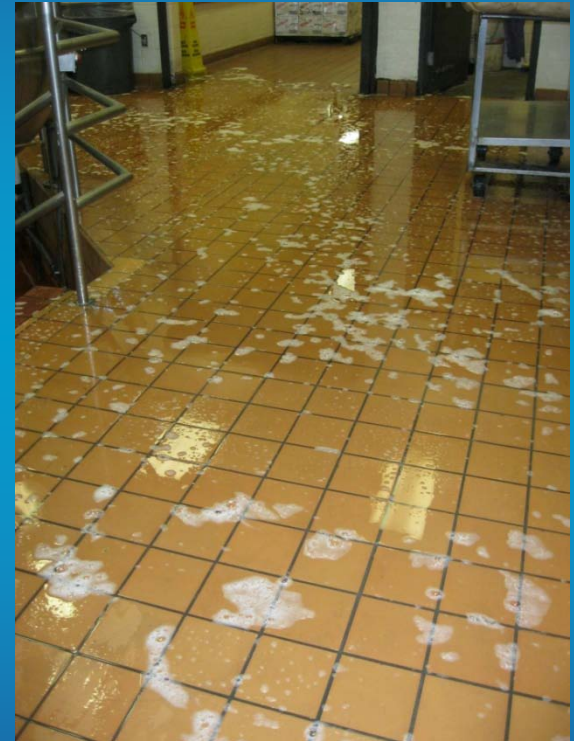
Issues and Obstacles for Delayed Success

- ◆ **Bailey**
 - Delays occurred due to electrical conduit issues
- ◆ **Donovan**
 - Paperwork issues



Potential Donovan Projects

- ◆ **Laundry- 4% capacity to process over 6 million pounds per year**
- ◆ **Kitchen- 12%**
- ◆ **Common area toilets-3 %**



Potential Bailey Projects

◆ **Laundry- 6.15%**

- **Serves all SD County detention facilities**
- **5 Washex 440 pound industrial sized washers**
- **12K pounds per day; 5 days a week**

◆ **Kitchens- 4%**

- **Serves all SD County detention facilities**
- **38,000 meals per day**



Otay's CII Present and Future Plans

- ◆ **Created a Commercial Process Improvement Program (PIP) in January of 2010**
- ◆ **Continuing to work with our top CII users, especially top 10**
- ◆ **Requesting consultants to conduct up to 10 commercial audits**



Current CII PIP Projects

◆ Fuller Ford

- Recovers and reuse of car wash's reverse osmosis (RO) reject water for irrigation water



Current CII PIP Projects

- ◆ **Chula Vista Elementary School District
urinal change-out**
 - **102 urinals flushing at changed out to
waterless urinals**



Otay's FY 10 Top 10 CII

Name	AF
Donovan State Prison	590
Bailey Correctional Facility	532
<i>Cal Pine-Otay Mesa</i>	188
Southwestern College	132
Cuyamaca College	96
Sharps Chula Vista Medical Center	91
Delimex	86
<i>Circle Foods LLC</i>	82
<i>Otay Ranch Town Center</i>	58
Knotts Soak City USA	41



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Questions?

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