

# This presentation premiered at WaterSmart Innovations

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Los Angeles  
Department of  
Water & Power

Technical Assistance Program (TAP)



*Going Beyond the  
Menu- Based  
Rebate Program*

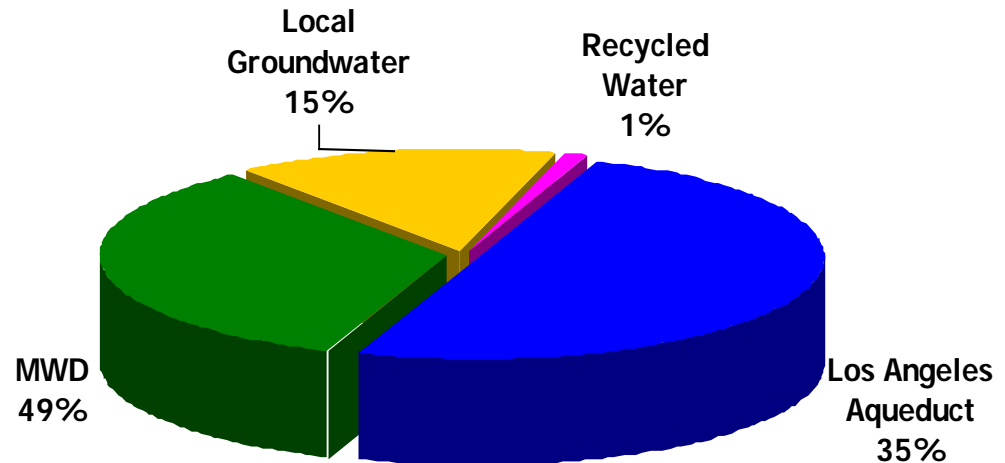
LADWP's Custom  
Technical Assistance  
Program



# What are we going to talk about?

- LADWP Water Supply Facts
- Technical Assistance Program (TAP) details – savings and costs, types of projects
- Monitoring the projects
- Project Examples
- Other water conservation measures for TAP
- Information you would need to start a program

# Water Supply Facts for LADWP



- **L.A. Aqueduct** – Eastern Sierra
- **Purchased Water** – MWD: Sacramento-San Joaquin Delta and Colorado River
- **Groundwater**
- **Recycled Water**



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# Water Supply Facts for LADWP

(continued)

- Water flows by gravity 338 miles from the Mono Basin and 233 miles from the Owens Valley to Los Angeles through the Los Angeles Aqueducts
- 7,200 miles of pipeline
- Eight storage reservoirs along the Los Angeles Aqueduct; 99 reservoirs & tanks
- Los Angeles uses about 215 billion gallons of water annually (659,810 AF)
- LADWP overall water use is the same as it was in 1970
- LADWP has 675,000 connections of which 65,000 are Commercial





## TAP details: savings and costs, types of projects

### Customized Water Conservation Projects

Rebate pays \$1.75 per 1,000 gallons of water to be conserved first 2 years, leads to cost/AF of \$228 (does not include utility worker labor) – expect 5 year project life

Minimum project savings: 75,000 gals/2 yrs (\$262 rebate); maximum project \$250,000 (savings of 71.4 MGY)

### Most Popular Project:

- Cooling Tower Efficiency Upgrades

Application and Pre-Inspection Required





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# TAP savings and costs, types of projects (continued)

**Started in: 1992**

**Total incentives provided: \$2,238,345**

**Total Savings since 1992: 15,000 AF**

**Examples of projects paid on:**

Food and Beverage process change

Coffee house R.O. system upgrade

Cold Storage CT upgrade

Flow restriction for Commissary

Biomedical wastewater reuse

Industrial Launderer equipment upgrade





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# Monitoring TAP projects – the importance of metering





# TAP Customer Success!

## Process Change Example- *no project is too big*

### LADWP Food and Beverage Manufacturer

- Proprietary process change

### LADWP Water Conservation Staff

- Customer came up with project and presented it to us
- LADWP and customer agreed on methods of determining savings; used in-house reports on process water usage rates
- 6-Months after project completed, LADWP paid the \$250,000 – upper limit set otherwise would have paid \$2.3M!

Total Project Cost  
**\$19,000,000**

LADWP Rebate  
**\$250,000**

LADWP Metered  
Water Savings

**651 million gpy  
(2,000 AF)**

Annual Customer Bill  
Savings  
**\$3,300,000**

Project payback in  
**5.7 Years**

# TAP Customer Success!

## Upgrading R.O. System Example- *small projects*

### Coffee House

- Soften and then use R.O. system for their coffee machines. Prevents mineral build up in pipes.
- Installed a R.O. system that is more efficient because:
  - (1) reduces the R.O. waste stream by 50%
  - (2) allows blending with city water while still meeting the mineral requirements
- Small savings x hundreds of stores



Total Project Cost  
**\$5,038**

LADWP Rebate  
**\$391**

LADWP Metered  
Water Savings  
**111,714 gpy**  
**(0.34 AF)**

Annual Customer Bill  
Savings  
**\$1,014**

Project payback in  
**4.6 years**

Total Project Cost  
**\$10,734**

LADWP Rebate  
**\$6,531**

LADWP Metered  
Water Savings  
**1.87 million gpy**  
**(5.74 AF)**

Annual Customer Bill  
Savings  
**\$14,968**

Project payback in  
**4 months!**

## TAP Customer Success! *Cold Storage Cooling Tower project*

### Cold Storage

- Wanted to run their cooling tower more efficiently
- Installed a pH/Conductivity controller and started a pH water treatment program
- Free meters supplied for Make-Up and Bleed water
- Existing Water Treatment vendor did the install and took care of everything else.



# TAP Customer Success!

## *Commissary flow restriction*

### Commissary

- Install flow control valves on 220 hoses used to wash catering trucks. The flow control valves reduce the flow from 7.5 gpm (measured with meter) to 3.5 gpm.



- Water saved in mandatory cleaning of the catering trucks

Total Project Cost  
**\$3,441**

LADWP Rebate  
**\$3,441**

LADWP Metered  
Water Savings  
**1,938,816 gpy (5.9  
AF)**

Annual Customer Bill  
Savings  
**\$17,643**

Project payback  
**FREE!**



# TAP Customer Success!

## *Recirculation Project Example-reusing clean wastewater*

Total Project Cost  
**\$21,857**

LADWP Rebate  
**\$14,141**

LADWP Metered  
Water Savings  
**8.7 million gpy**  
**(26.7 AF)**

Annual Customer Bill  
Savings  
**\$58,155**

Project payback in  
less than  
**1.6 months!**

### **LADWP Biomedical Customer**

- Waste stream from their Reverse Osmosis (water was softened before going through Reverse Osmosis system) was used as a direct feed to cooling tower makeup.
- A two-tank storage system was used to hold Reverse and De-ionized waste streams until it was sent to the cooling tower
- LADWP provided FREE meter to measure water pumped from RO system to cooling tower



# TAP Customer Success!

## *Industrial Equipment-Tunnel Washers*

Total Project Cost  
**\$1.5 M**

LADWP Rebate  
**\$55,024**

LADWP Metered  
Water Savings  
**15.72 million gpy  
(48.24 AF)**

Annual Customer Bill  
Savings  
**\$147,112**

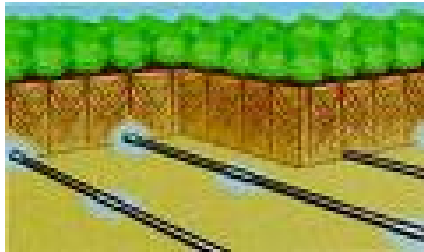


## LADWP Industrial Launderer Customer

- Tunnel washer replaced 7 separate front-loading industrial clothes washers
- Tunnel washer has 8 separate compartments which are computer controlled for each wash and rinse cycle
  - Each load of laundry requires a different washing and rinsing program
  - Tunnel washer reuses water from final rinse compartments in the wash cycle

## Other water conservation measures for TAP

- Low volume showerhead retrofit
- Sub-surface irrigation
- Irrigation system upgrades
- Pre-rinse spray nozzle retrofits
- Recycling systems





We can email the application template,  
brochure template, and Board Letter.

Email Robert Estrada at

[robert.estrada@ladwp.com](mailto:robert.estrada@ladwp.com)

or Mark Gentili at [mark.gentili@ladwp.com](mailto:mark.gentili@ladwp.com)



QUESTIONS?

**20,000 ton CT**