

# Water Use Strategies for Golf Courses

LADWP & Golf Industry Task Force  
February, 2013



# City of Los Angeles

- Public Utilities Department - services 716,531 connections
- Operates solely on funds from rates and service charges
- Over 3.8 million people
- Covers 465 square miles
- Approximately 602,057 residential accounts and 60,056 commercial accounts



# Sources of Water



# Water Rates



- 100% volumetric (no fixed monthly charges)
- Two-tiered, increasing block rate structure to encourage conservation
- First tier rate applies to basic water use, while second tier rate applies to higher water usage
- Rate structure accounts for temperature zone, lot size, household size

# City Ordinances

- Emergency Water Conservation Plan Ordinance – 1990
- Landscape Ordinance - 1996, updated in 2009 to comply with new State Model Landscape



Los Angeles  Department of Water & Power

AUGUST 2010 UPDATE

## PROHIBITED USES

### Revised Water Conservation Ordinance



#### SPRINKLER USE RESTRICTIONS

Your street address determines the days on which watering with sprinklers is permitted:

**Odd numbers: Mondays, Wednesdays, Fridays**

**Even numbers: Tuesdays, Thursdays, Sundays**

Sprinkler use is allowed before 9:00 a.m. and after 4:00 p.m. only, for up to 8 minutes per station per watering day. Customers with water-conserving nozzles (rotors and multi-stream rotary heads) are allowed two 15-minute cycles each watering day.

#### OTHER PROHIBITED USES OF WATER

- Watering of any hard surfaces such as sidewalks, walkways, driveways or parking areas unless flushing is needed to protect health and safety;
- Outdoor watering between the hours of 9 a.m. and 4 p.m.;
- Outdoor watering when it is raining;
- Allowing runoff onto streets and gutters from excessive watering;
- Allowing leaks from any pipe or fixture to go unrepaired;
- Washing vehicles without using a hose with a self-closing water shut-off nozzle;
- Serving water to customers in restaurants unless requested.
- Using water to clean, fill or maintain decorative fountains unless the water is part of a recirculating system;
- Installing single-pass cooling systems in new buildings;
- Installing non-recirculating systems in new car wash and commercial laundry systems; and
- Allowing large landscape areas to be watered without rain sensors that shut off irrigation systems.

The Ordinance also requires that hotel and motel operators provide guests with the option of not having towels and linens laundered daily.

# Emergency Water Regulations

- August 2008 – Revised existing Ordinance and began implementation of Phase I mandatory restrictions
- June 2009 – Increased mandatory conservation requirements
- August 2010– Phase II mandatory restrictions

# Southern California Water Supply



- 3 year drought and pumping restrictions in California have strained water supplies
- Mayor calls for voluntary water conservation in June 2007
- LADWP implemented Phase III and 15% shortage year rates effective June 1, 2009

# Water Conservation Ordinance Basics

- No irrigation between the hours of 9:00AM and 4:00 PM, except for greens and tees
- Recycled water exempt
- Decorative fountains require re-circulating systems
- Rain sensors are required
- No pavement wash-down
- Vehicle washing requires self-closing nozzle





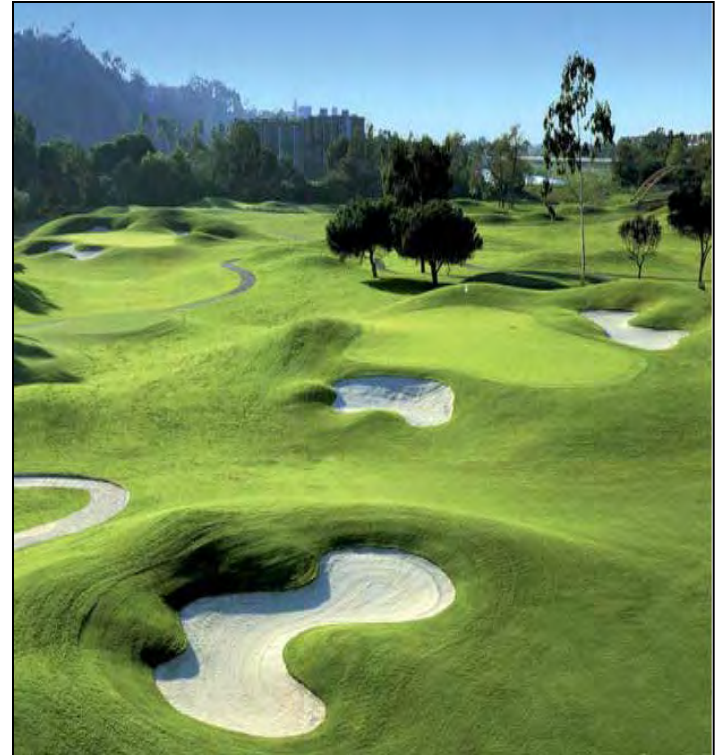
# Water Conservation Ordinance Basics – Phase III

- All Phase I restrictions still apply
- LADWP customers can only irrigate on Mondays and Thursdays



# Issues for Golf Courses

- Two-day-a-week watering may not provide a long enough watering window to irrigate the whole course
- Events/tournaments could conflict with available watering days
- No exemptions for overseeding and re-establishment of turf



# Alternative Means of Compliance

- The City of Los Angeles Emergency Water Conservation Plan was amended in August 2009 to allow for an alternative means of compliance
- Large Landscape Areas can be exempt from the number of watering days, if they can reduce their consumption by 20% versus their 2006/2007 base water usage or a budget calculated by Landscape Water Manager

# Landscape Water Manager Budget Program

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File Manager
Main Menu

PROJECT: CourseF
WATER BUDGETING - Estimate

Weather Set
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San Fernando
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Hydrozone Name	Land Coef	Working Storage	Eff Rain	Area (ft <sup>2</sup> )	DU	System Loss	Irrigation Requirement
Tees & Greens	0.79	0.24	0%	296208	70%	0%	15247
Fairways & Rgh	0.65	0.24	0%	5227200	70	0	216723

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Select Meter

A R E A (ft <sup>2</sup> )				W A T E R (CCF)			
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						231971	

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
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# Alternative Compliance Requirements



- Must have approved weather-based irrigation
- Must reduce overall monthly water use by 20% from customer baseline
- Must use recycled water if available

# How to Apply for Alternative Compliance

- Send request letter to LADWP that includes;
  - general information such as property address, meters, square footage, weather based irrigation information
  - brief statement of how you will achieve 20% water use reduction
  - primary contact for compliance application process
- Include all supporting documents such as photos, maps, and/or drawings

# Approval & Tracking

- LADWP will provide 2006/2007 usage and MAWA water budget
- LADWP will send approval letter
- LADWP will track consumption monthly on a rolling 12 month basis to confirm that each course is saving 20% over chosen budget
- 1 month over budget will result in warning. Subsequent months will have monetary penalties. Continued violations may result in removal from program

# LADWP Point of Contact

- **Rick Silva**, LADWP Water Conservation
- Phone: (213) 367-0893
- Email: [Enrique.silva@ladwp.com](mailto:Enrique.silva@ladwp.com)
- Address: 1230 W. 3<sup>rd</sup> Street, #111, Los Angeles, CA 90015



# Commercial CA-Friendly Landscape Incentive Program

- Launched in October 2009
- Pays \$1 per square foot of turf removed and replaced with the following:
  - California-friendly plants
  - Permeable hardscapes and mulch
- Pre-Inspection - Post-Inspection - Payment
- New landscape must remain for 15 years



<b>Incentives Provided</b>	<b>AFY Savings</b>
Approx. \$5 million	377

# Commercial CA-Friendly Landscape Incentive Program



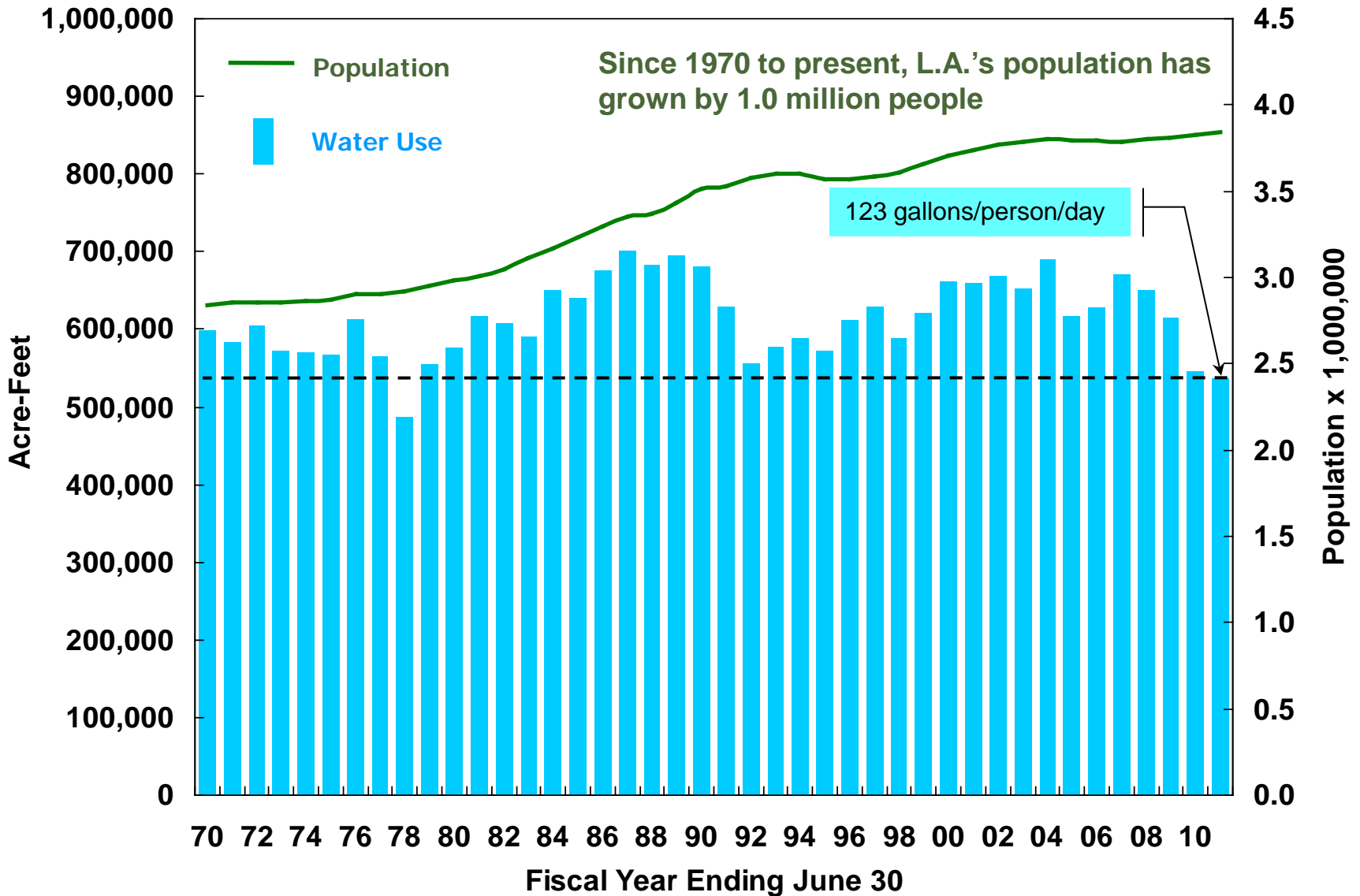
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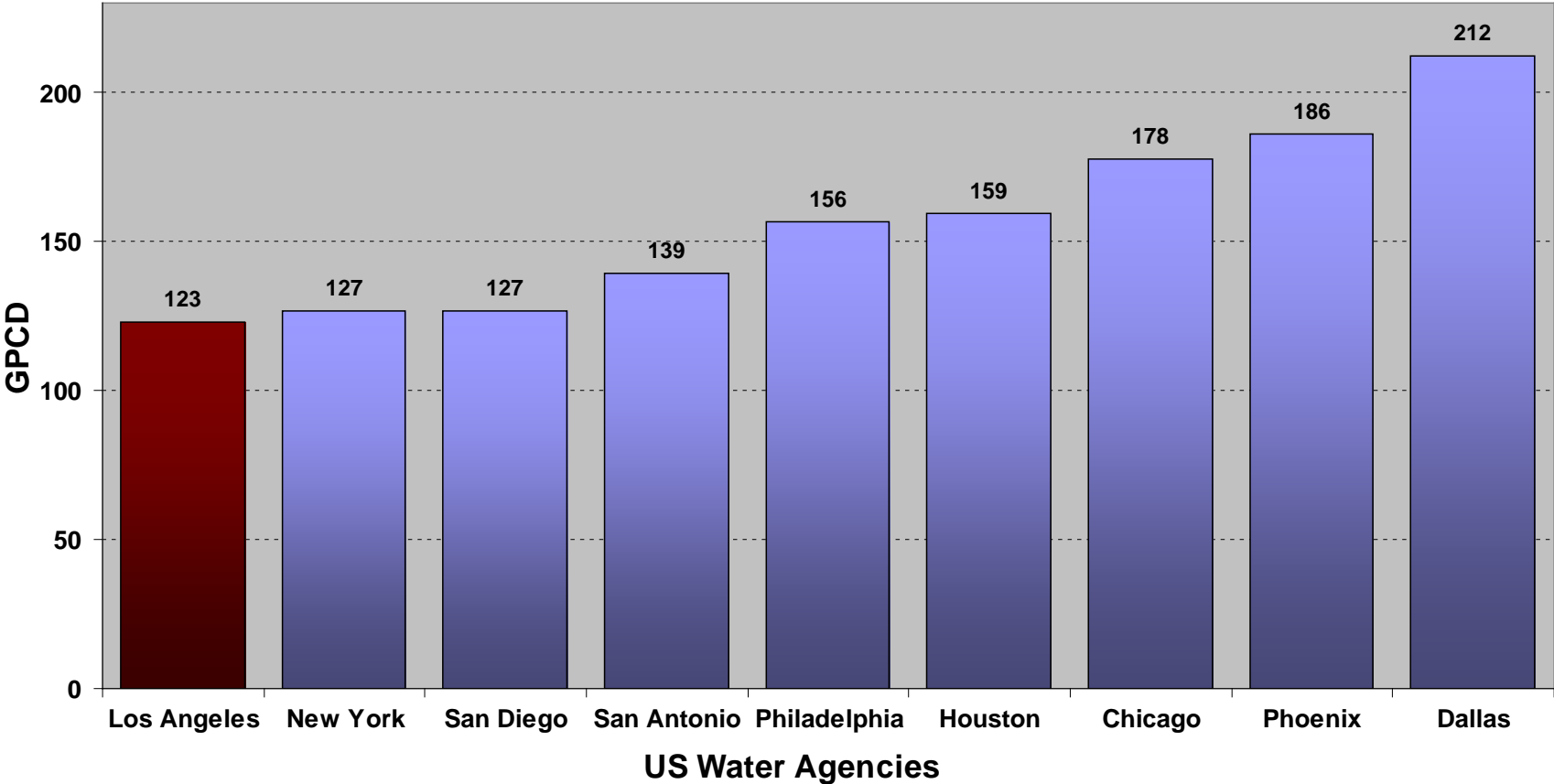


# Effect of Conservation

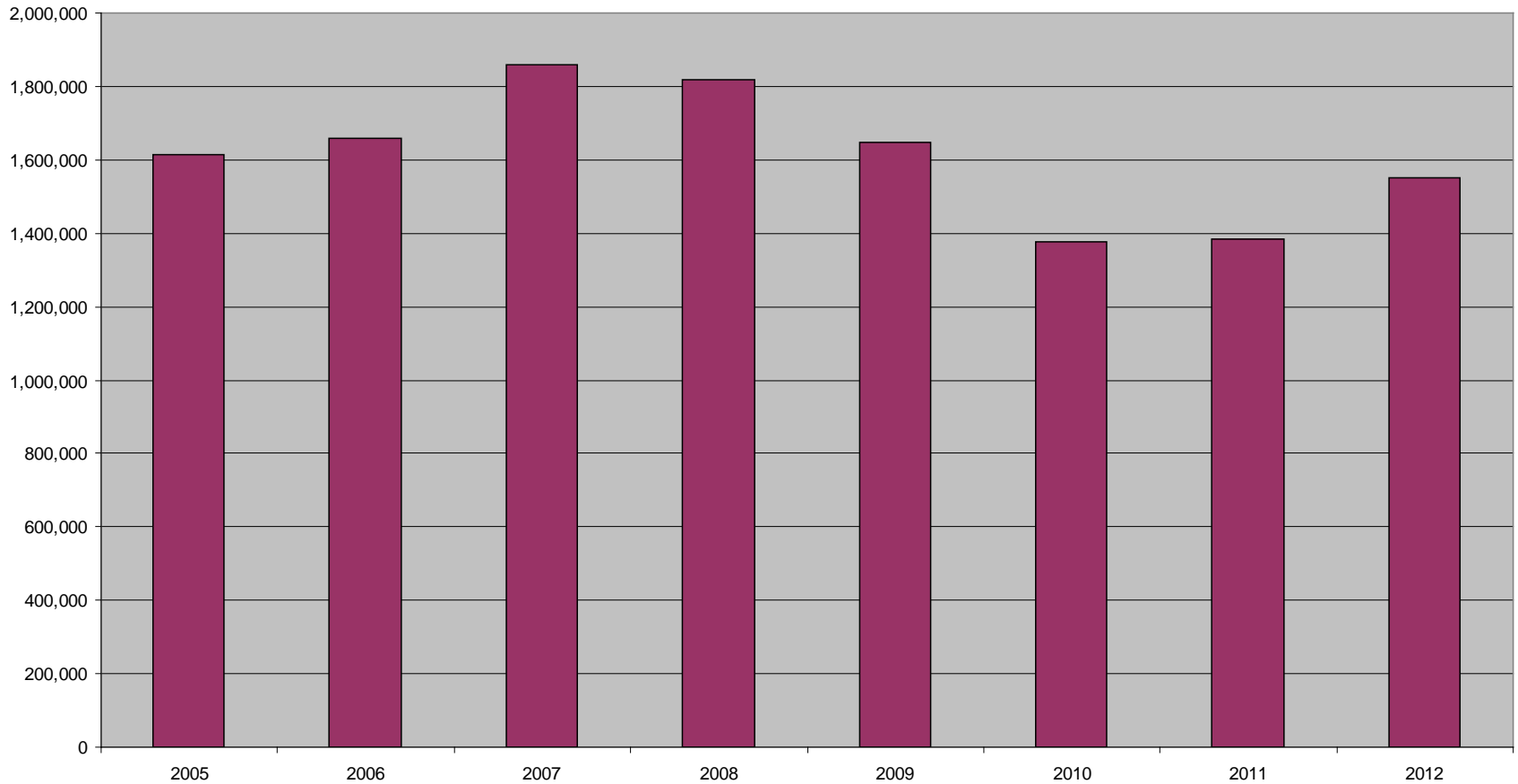


# GPCD COMPARISON

**GPCD (Gallons Per Capita Per Day) for the Nine US Cities  
with Populations Greater Than 1,000,000**



# Golf Course Potable Water Use



# QUESTIONS?

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