

Denver Water Conservation

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Conservation Specialist

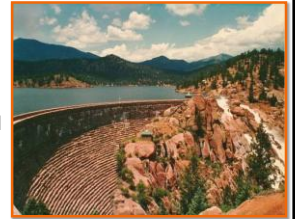
November 17th, 2011

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WHAT YOU
NEED.**



Overview of Denver Water

- Independent agency established by Denver City Charter
 - No land-use or city ordinance-making authority
- Fully funded by water rates and system charges
 - No tax revenue
 - Not for profit
- Supply 1.3 million people today



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Future Challenges

- Increasing population
 - 40% growth in service area by 2050
 - Job service sector will see similar gains
- Climate Change uncertainties
 - Hotter, but will it be drier or wetter?
- Aging infrastructure
 - Much of our infrastructure dates to WWII

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2016 Conservation Goal



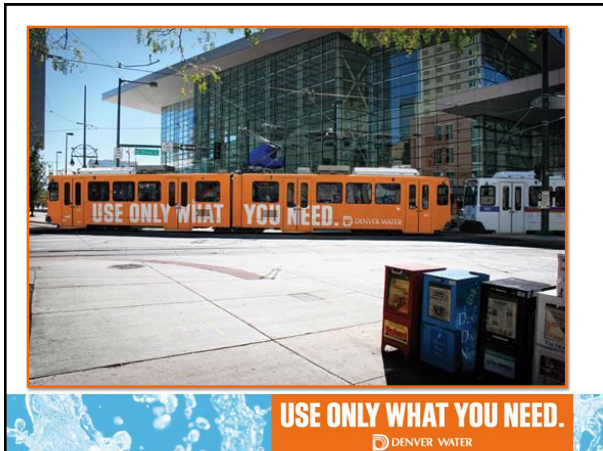
Cut consumption by 22% from pre-drought years (defined as 1993-2001)

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Conservation Methods

- Education and outreach
- Rules
- Audits
- Research, monitoring and evaluation
- Tiered rates = use more, pay more per unit
- Rebates and Incentives



Adjust Irrigation Schedules Monthly!

HOW MUCH WATER DOES A HEALTHY LAWN NEED?

Watering Times will help you determine how long to water each zone on your watering day; or, Watering Amounts show you how much water your grass needs each week.

WATERING MONTHS	WATERING TIMES (minutes per 2000)			WATERING AMOUNTS
	Fixed Spray Heads	Rotor Heads	Manual Sprinklers	
JAN – APRIL	Water as needed, especially trees and shrubs.			
MAY	13	29	20	1"
JUNE	20	43	30	1 - 1/2"
JULY	23	50	35	1 - 3/4"
AUGUST	20	43	30	1 - 1/2"
SEPTEMBER	13	29	20	1"
OCTOBER	Water as needed, especially trees and shrubs.			

Need help with this chart or want more precise irrigation information? Visit www.denverwater.org and click on *Tap-Smart Irrigation for Homes*.

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Water Waste Enforcement

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Soil Amendment Rule

- Denver Water's operating rules require property owners to amend soil with compost before Denver Water will set a new meter



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Toilet and Fixture Retrofits



Updating to a HET, lower-flow aerators and showerheads cut annual water use by 15% on average for homes visited

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High Bill Audits

- Customers who have an unexpected and unexplained high water bill can get a high-bill audit.
- Perform an audit of the property to look for leaks, irrigation system issues, etc.



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Audits

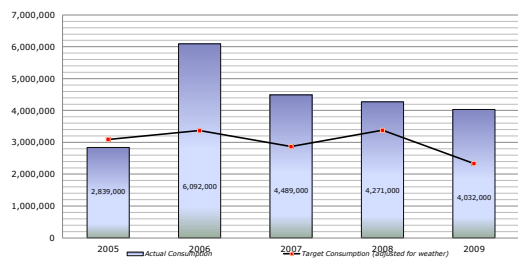
- Indoor
- Outdoor
- CII



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Historical Consumption



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Calculation Worksheet

PROPERTY XYZ, DENVER CO.

• BASELINE	4,344,600 GALLONS
• WEATHER NORMALIZED BASELINE	4,354,475 GALLONS
• IRRIGATED AREA	166,175 SQUARE FEET
• GALLONS PER SQUARE FOOT AVERAGE	26 GPSF
• HISTORICAL GALLONS PER SQUARE FOOT GOAL	18 GPSF
• POTENTIAL ANNUAL SAVINGS IN GALLONS	1,363,325 GALLONS
• POTENTIAL ANNUAL WATER BILL SAVINGS	\$5,467
• POTENTIAL IRRIGATION EFFICIENCY CONTRACT PAYMENTS	\$25,080

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Irrigation Efficiency Program



- Customer installs irrigation and/or landscape upgrades to save water (reviewed by Denver Water)
- Denver Water gets into a 3 year contract with the property
- Denver Water Pays \$6,000 per acre foot of actual water saved for a 3 year period

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Outdoor Case Study

Heritage Place HOA paid \$57,000 for new equipment, repairs, overdue maintenance and storm water management. Between Denver Water's incentives and water bill savings, Heritage Place HOA will recoup its cost in less than two years. Were able to reduce use by 40%



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Indoor Case Study

Cherry Creek III THA replaced about 400, 3.5 gallon per flush (gpf) toilets with HET (1.28 gpf) toilets. Within first 3 months they had a 30% reduction in water use.

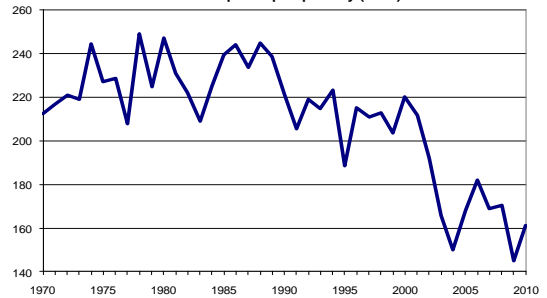


- The THA is saving about \$45K annually on water and sewer bills.
- The upgrades cost a total of \$61K
- Denver Water paid \$51K in rebates and THA covered remaining \$10K

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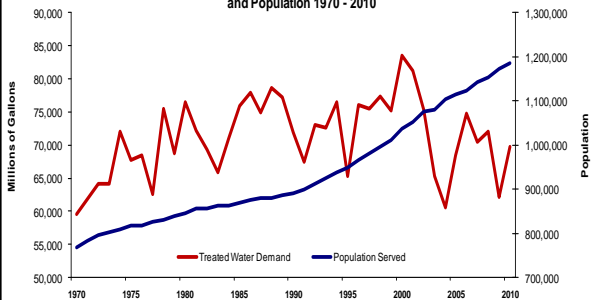
Treated Water Use
Gallons per Capita per Day (GCD)



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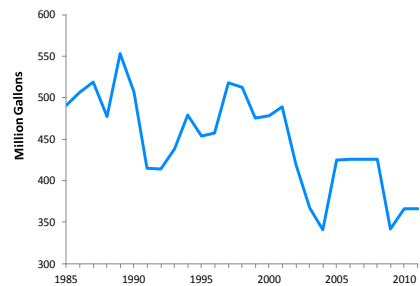
Treated Water Demand
and Population 1970 - 2010



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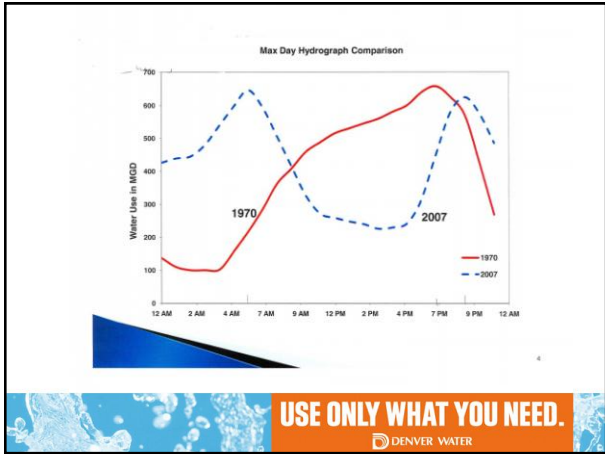
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Maximum Day Use



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Research and Reports

- Sustainable Landscape Conversion Design and Irrigation:**
Recommendations for converting bluegrass turf to sustainable low water usage landscapes
- Solutions:** Annual publication highlighting Denver Water projects and programs
- Surveys**

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