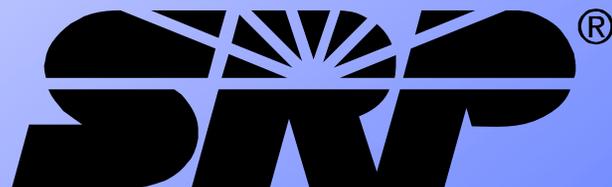
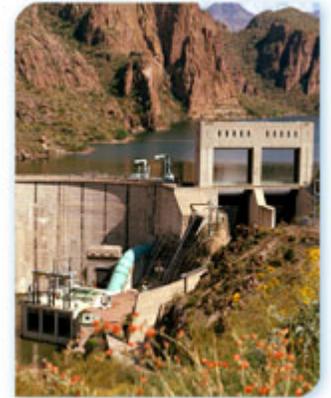
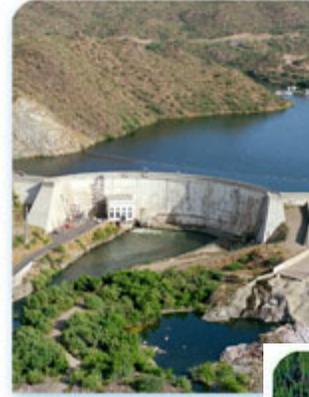
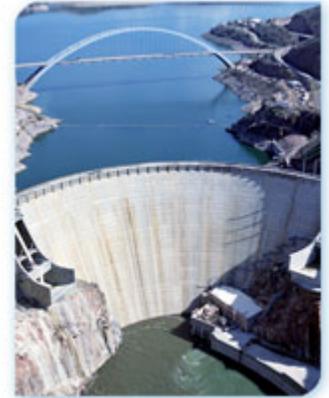
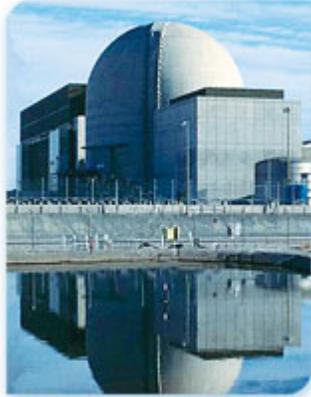
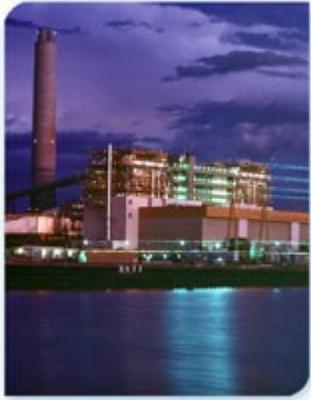


# ***Collaborating on Water / Power Efficiency Programs***

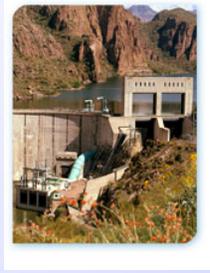
***Presented by  
Bruce Hallin / Doug Holton***

***March 5, 2008***





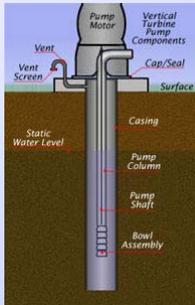
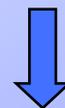
# Energy Components Associated with Water Treatment and Delivery



SRP Reservoirs



CAP System



Groundwater



Canal



Treatment Plant



Booster Station



Home

# ***Energy Components Associated with Water Treatment and Delivery***

**Additionally...**



**Home**



**Pump**



**Waste Water Treatment Plant**

# *The Cost to Treat and Deliver Water*

Getting it home:

Component	Energy Requirements
Pumping	5.41 kWh / 1000 gal
Water Treatment	
<b>6.47 kWh / 1000 gal</b>	

Taking it away:

Waste Water Transport	.4 kWh / 1000 gal
Waste Water Treatment	4.15 kWh / 1000 gal
<b>4.55 kWh / 1000 gal</b>	

**11 kWh** are required to treat and deliver 1000 gallons of water to your home. This is the same as the energy needed to power a 100 watt light bulb for 4 hours per day for a month.

# Bringing it Home

By saving water, we save electricity.

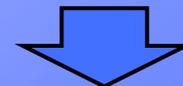
## Inside The Home:

### Everyday Actions

5 minute showers	12,000 gal/yr
Turn off water while brushing teeth	10,400 gal/yr
Fix a leaky faucet	2,700 gal/yr

### Home Improvements

Install high-efficiency shower heads	6,200 gal/yr



47,700 gal/yr

or

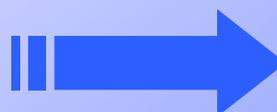
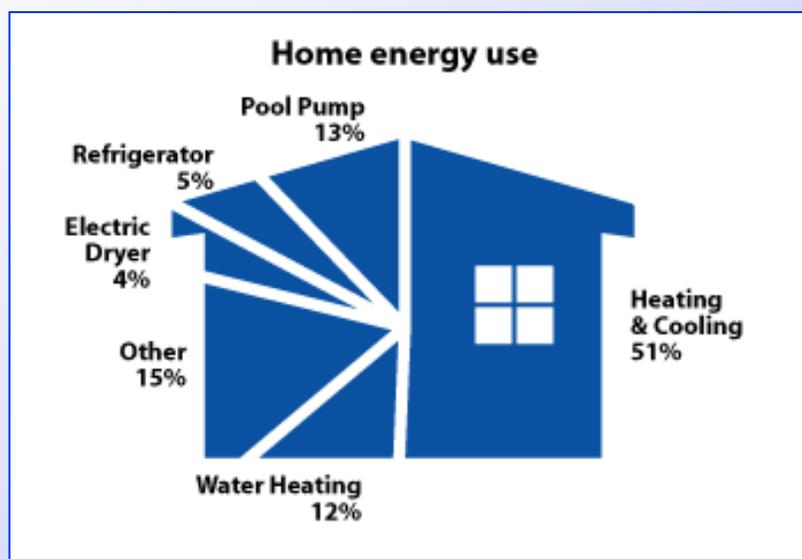
218 kWh/yr



110 gallons

# Expanding to The Community

The savings compound if the community works together to conserve.



**218,000 MWh/yr**

(1,000,000 houses saving 218 kWh/yr)



This is enough energy to power 14,000 homes for a year – **through water conservation alone!**

# Increasing the Impact

## Expanding Savings to 3 Cities:

If each household in Arizona's three largest cities saved 218 kWh per year through water conservation efforts...

	Metro Phoenix	Flagstaff	Tucson
Population	3,200,000	53,000	683,000
People/household	2.4	2.4	

Estimated savings  
**357,000 MWh/yr**



357,000 MWh/yr saved through water conservation alone is enough to power 23,000 homes for one year – **that's a city the size of Flagstaff!**

# ***SRP's Promotion of Arizona Rinse Smart***

- **1,777 low water use, high pressure pre-rinse spray nozzles installed in commercial kitchens Valley-wide**
- **Unique partnership opportunities**
  - ✓ SRP and ADWR
  - ✓ SRP Water and Power
  - ✓ SRP and its electric customers
- **Water and energy savings**
  - ✓ 15,800,000 gallons of water saved annually
  - ✓ 1million kWh and 161,000 therms saved annually
- **750 tons of carbon saved annually**
- **\$171-194/avg. annual savings**



# SRP Water Rebate Programs

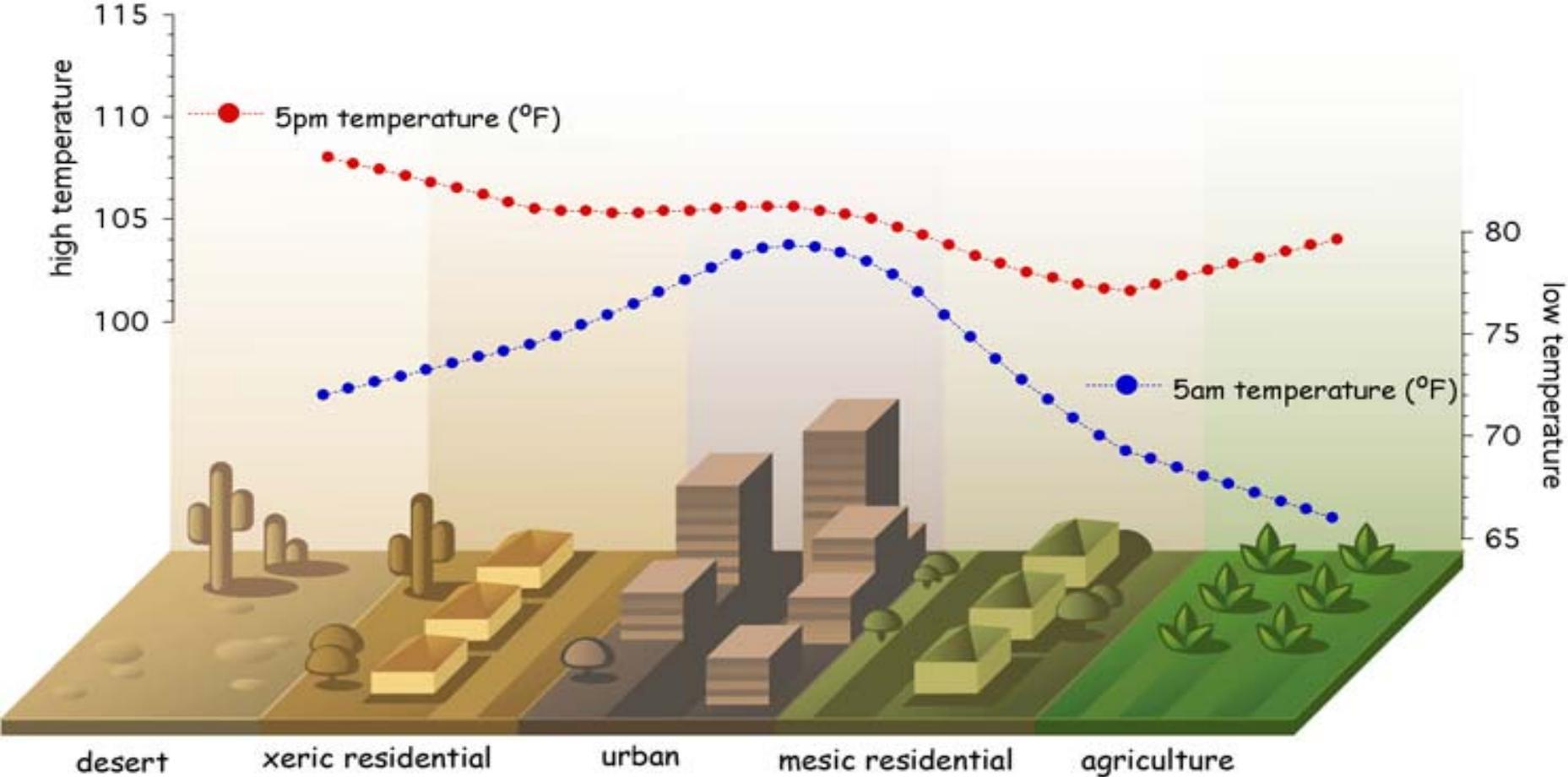


50% OFF A SMART  
IRRIGATION CONTROLLER.  
SAVE MONEY.  
SAVE TIME. SAVE WATER.



# Urban Heat Island

## Comparison of Different Environs



Data Source: ASU, National Center of Excellence on SMART Innovations, Urban Climate Research Dept. (A. Brazel)

## ***Current Activities***

- Energy for Education program
  - Ice making equipment
  - Dishwashers
  - Pumps & motors – chilled water system
- Low Income Weatherization program
  - Door, window & duct sealing, lo flow faucets, other envelope improvements

# ***Current Activities***

- Trees for Change
  - Partnership with the U.S. Forest Service
  - Customer \$3/mo matched by SRP up to \$80,000
  - 100% goes to planting trees in forests
  - \$3/mo + SRP match = 72 trees/year

## ***Current Activities***

- SRP Pinal County Customer Center
  - LEED – at least Silver rating eligible
  - 12,000 SF of Roof-mounted solar units
  - Operational Fall 2009

# ***Planned Activities***

- Budget approval April 2008
  - Residential
    - Prescriptive
    - Low Income
  - Non-residential
    - Prescriptive
    - Custom
    - Retro-fit
    - New Construction

# ***Future Activities***

- Green Acres
  - holistic design & construction methods
    - indoor air quality
    - resource conservation
    - building sites, orientations, systems, and materials
    - reduce construction and operations waste
    - evaluate short and long-term costs
  - SDG&E's Sustainable Communities Program

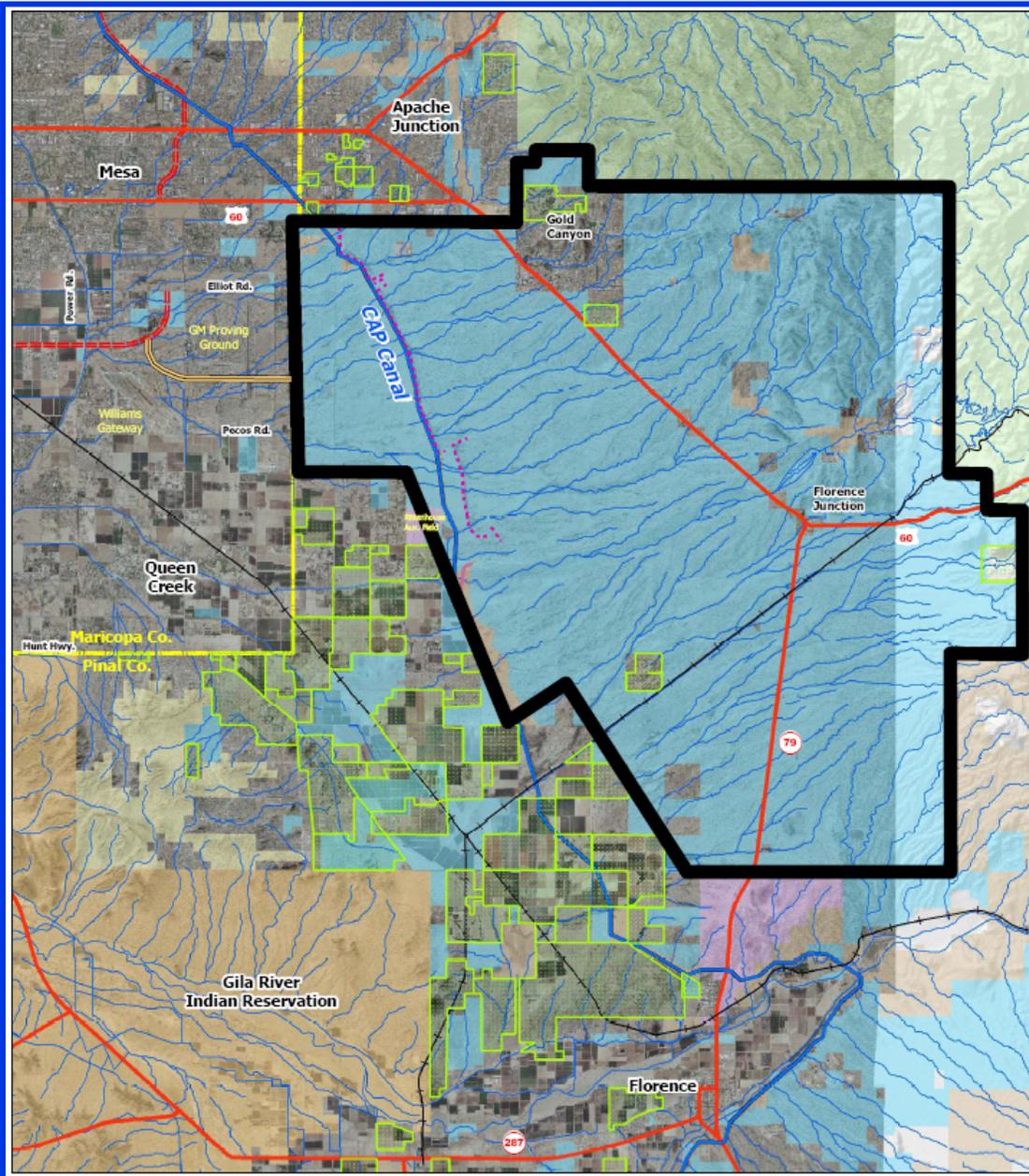
# ***Future Activities***

- Golf Course Water initiative
  - Pumping/irrigation system audit
    - Variable Frequency Drive Pump
    - Energy usage optimization software
    - Leak detection system

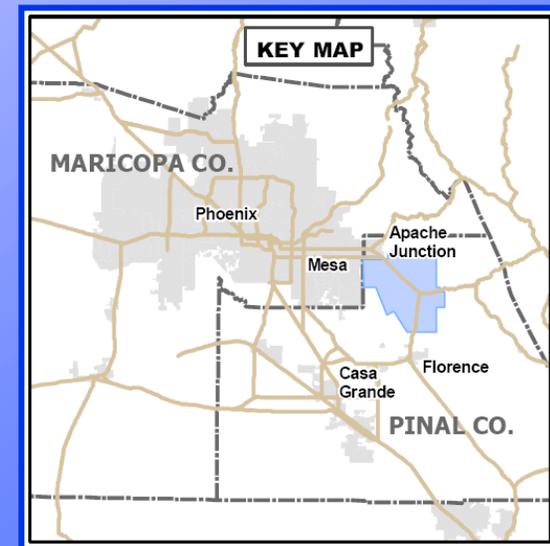
# ***Future Activities***

- Plant-a-Tree program
  - “Trees of Tucson” program
  - SRP with local gov’t or community organization
  - Chilean Mesquite, Chinese Elm, Willow Acacia and Coolibah Gum

# Superstition Vistas - Planned Area



- 275 Square miles – south of Superstition Mountains in Pinal County
- State Land Department is owner
- Almost entirely SRP Electric Service Territory





Not yet in drought.



In drought.