Federal Water Management

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FIMS Workshop – June 15, 2010

Federal Energy Management Program

The mission of the Federal Energy Management Program is to facilitate the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the Nation's energy security and environmental stewardship.

Federal Water Working Group

The Federal Water Working Group is an interagency advisory group with a charter to develop strong partnerships, promote new technologies and tools, develop guidance on Federal water related policy, distribute information on best practices, and provide recognition for exemplary performance.

Why should we save water?

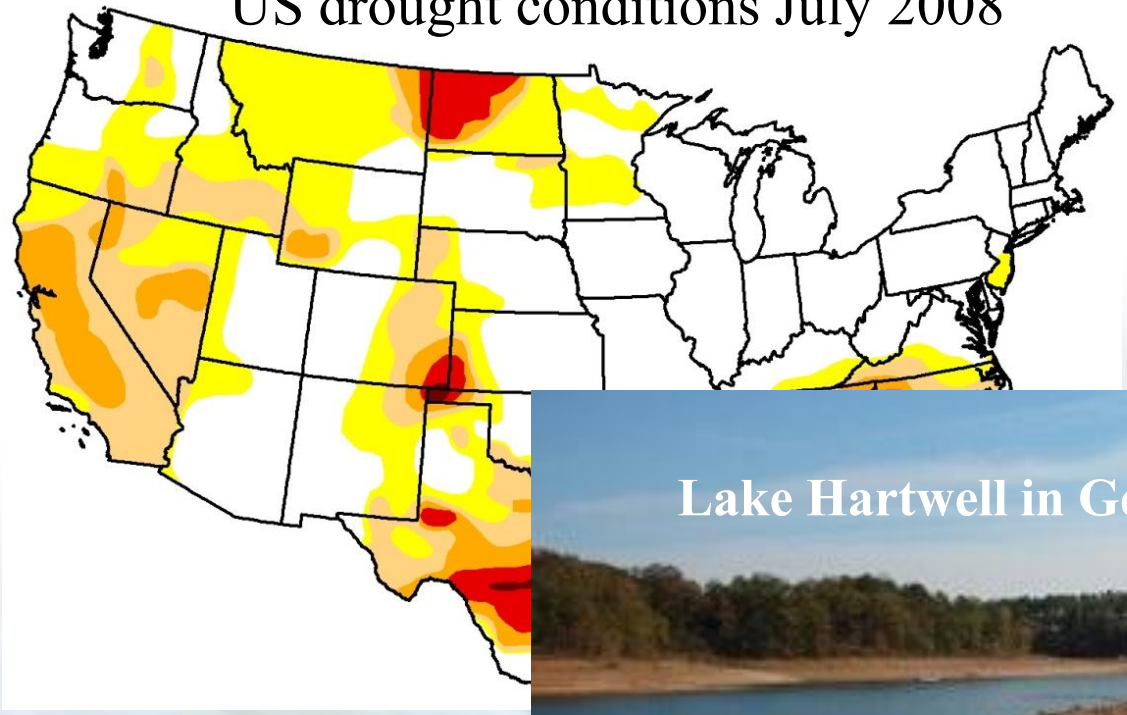
Less than 1% of Earth's freshwater is available for our use.

Only 0.036% is found in surface supplies!

US population doubled between 1950 and 2000.

Water demand tripled!

US drought conditions July 2008



Drought and water constraints can strike anywhere in the US…

We are mandated to save water.

Federal Water Legislation

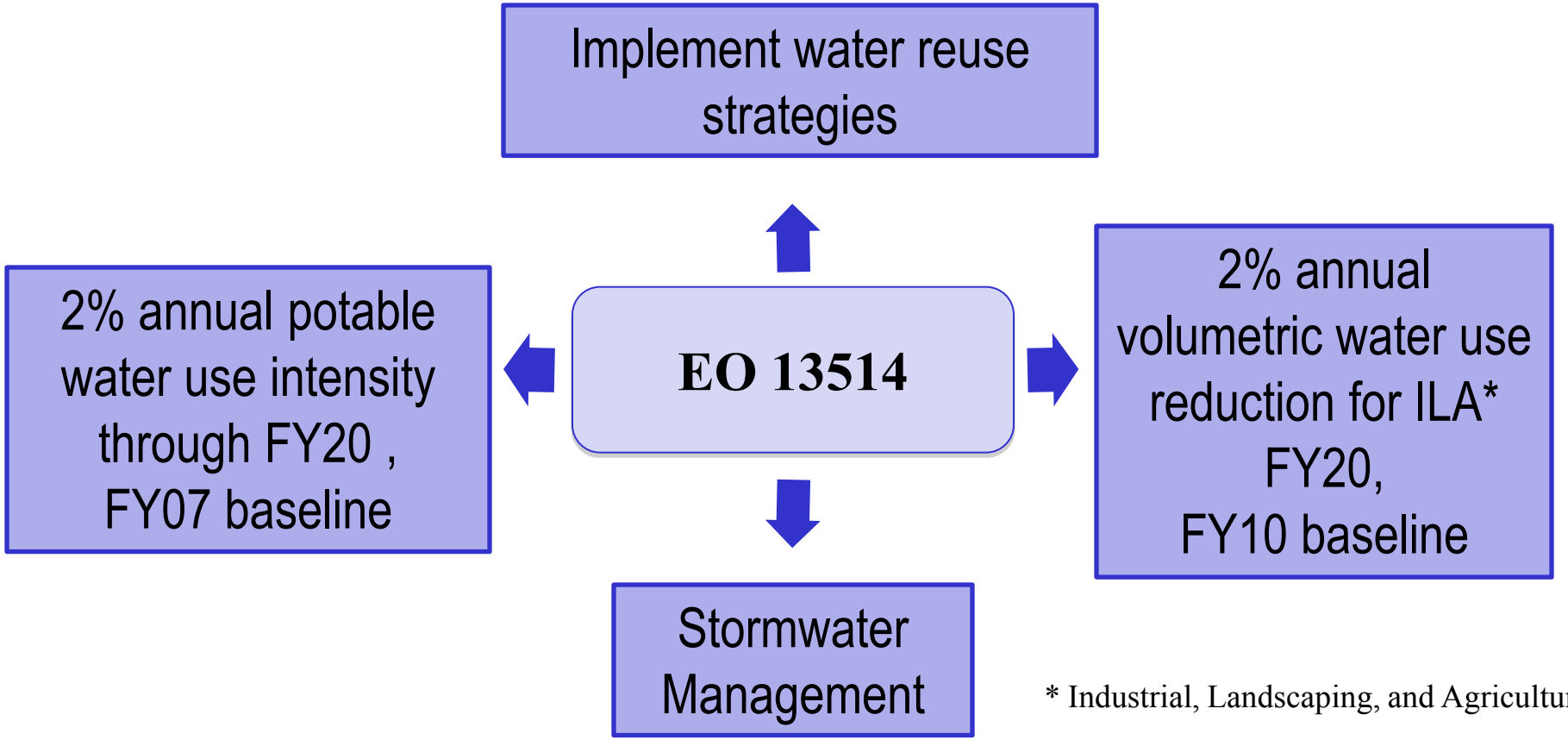
Reduce Federal Water Use

EO 13423
2% annual potable water use intensity reduction – 16% by 2015

EO 13514
Extends EO 13423 plus non-potable water use reduction

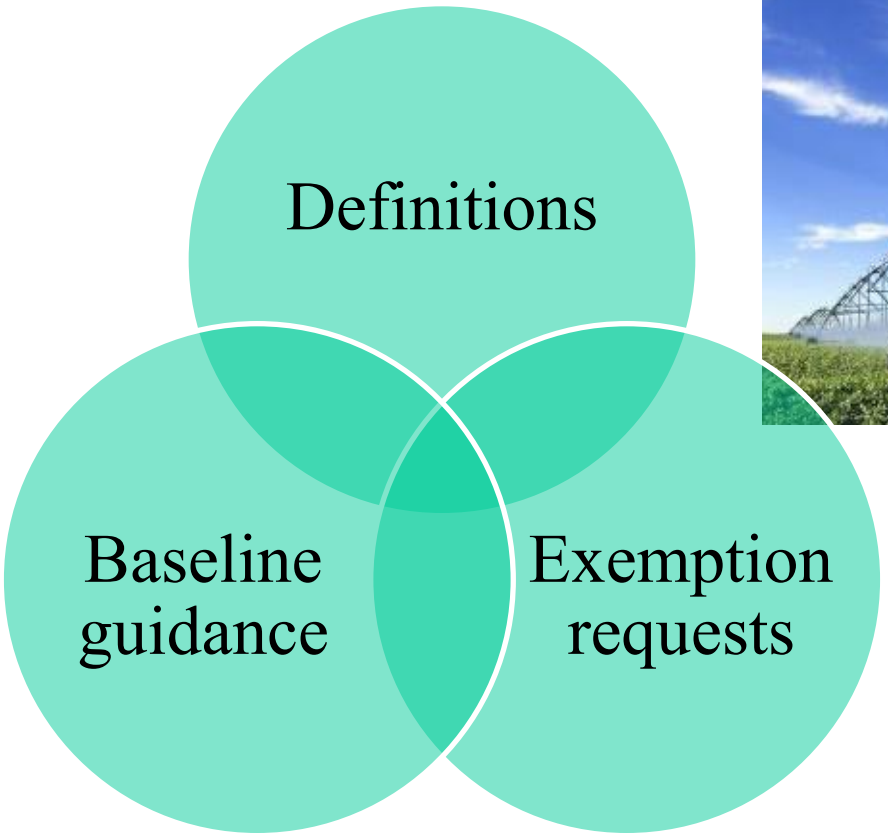
EISA
25% of facilities evaluated for water and energy annually

EO 13514



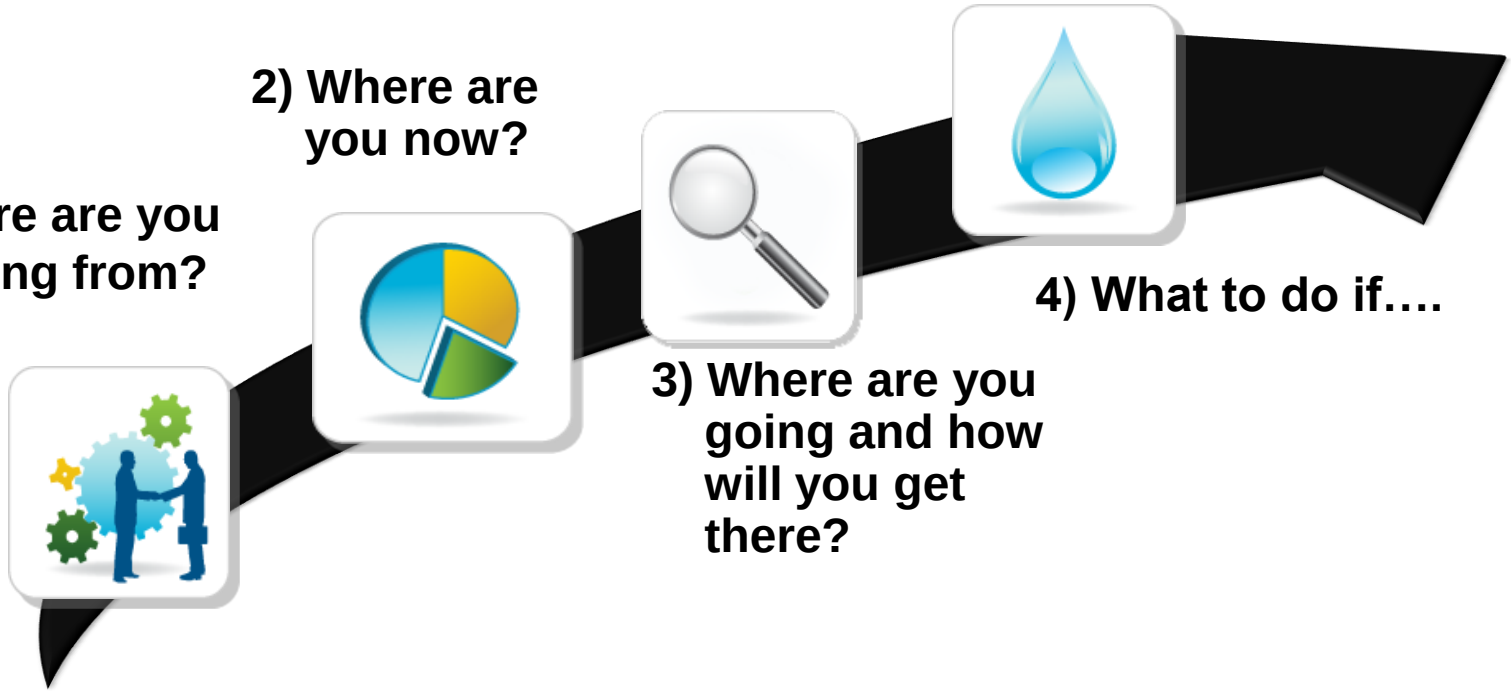
* Industrial, Landscaping, and Agricultural

EO 13514 Proposed Guidance



How will you meet these goals?

Water Management Process



Build Team

Gather data

Set Goals

Identify Require-ments

Gather data

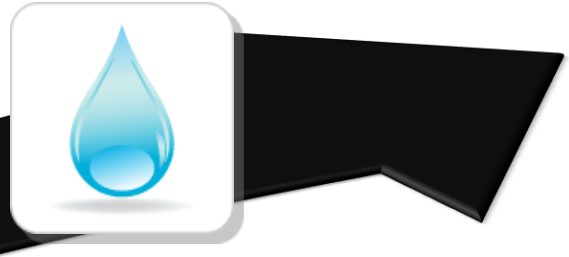
1. Building inventory – square feet and building type
2. Historic water use and cost
3. Historic wastewater use and cost
4. Building plans
5. Occupancy data

Water Management Process

1) Where are you coming from?

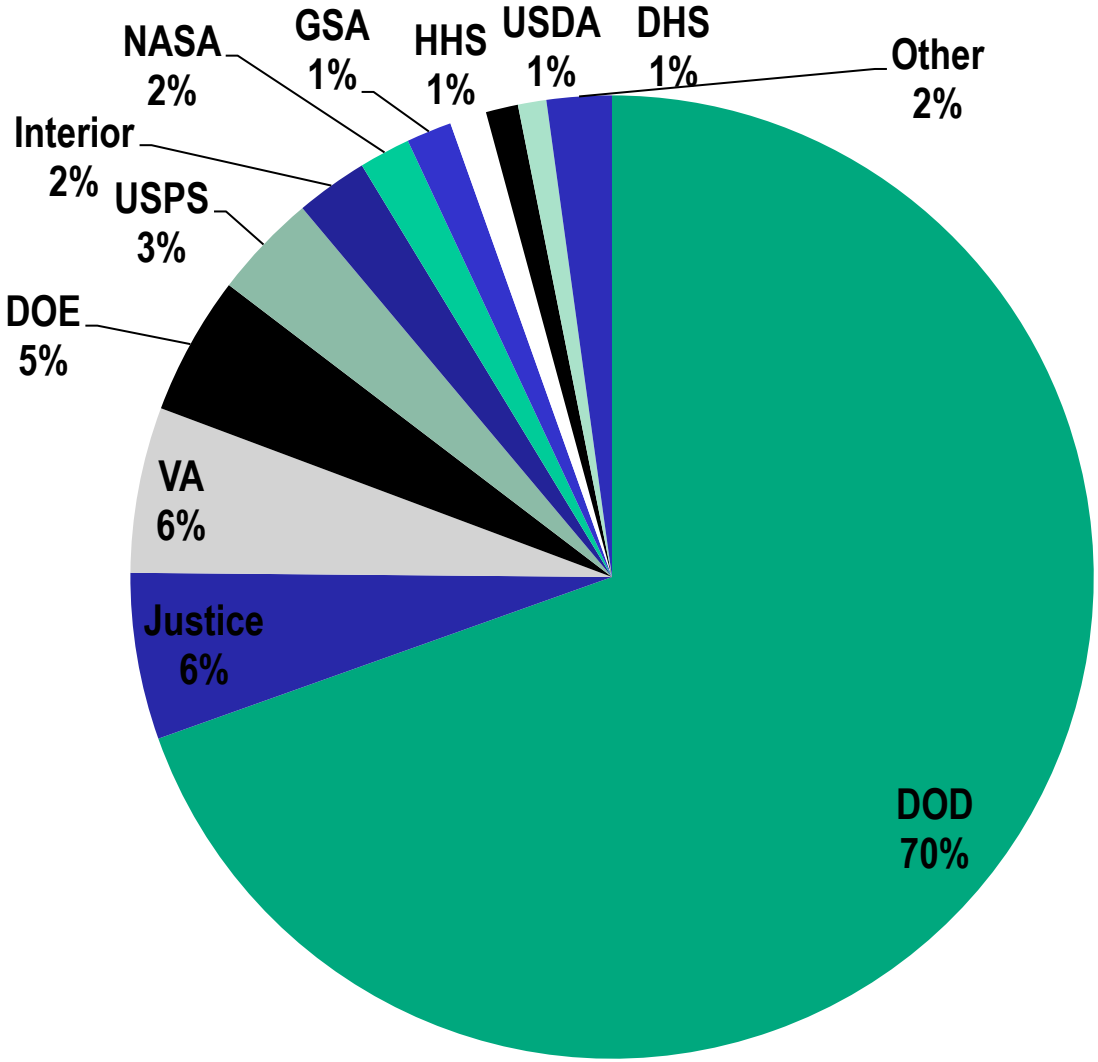
2) Where are you now?

3) Where are you going and how will you get there?

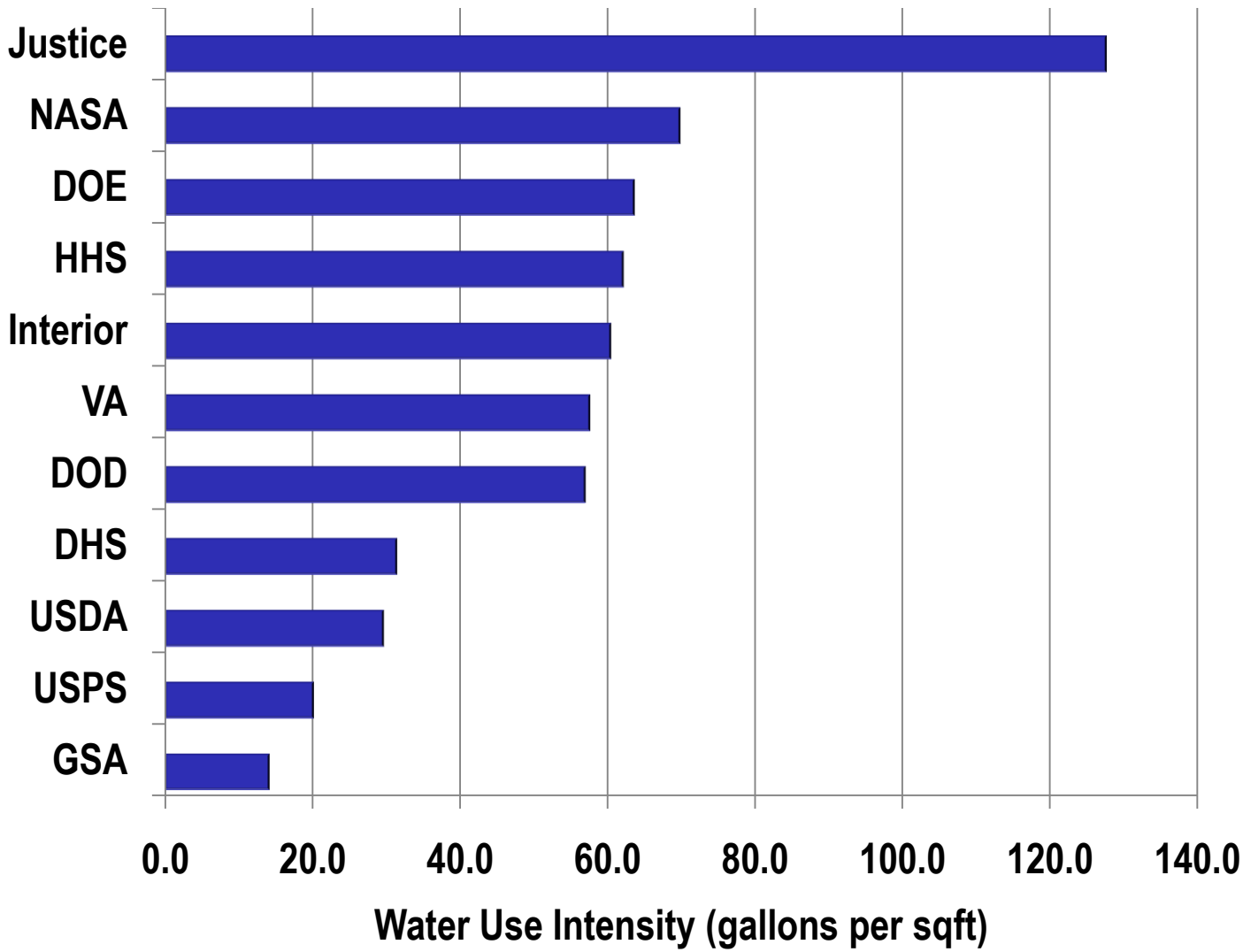


4) What to do if….

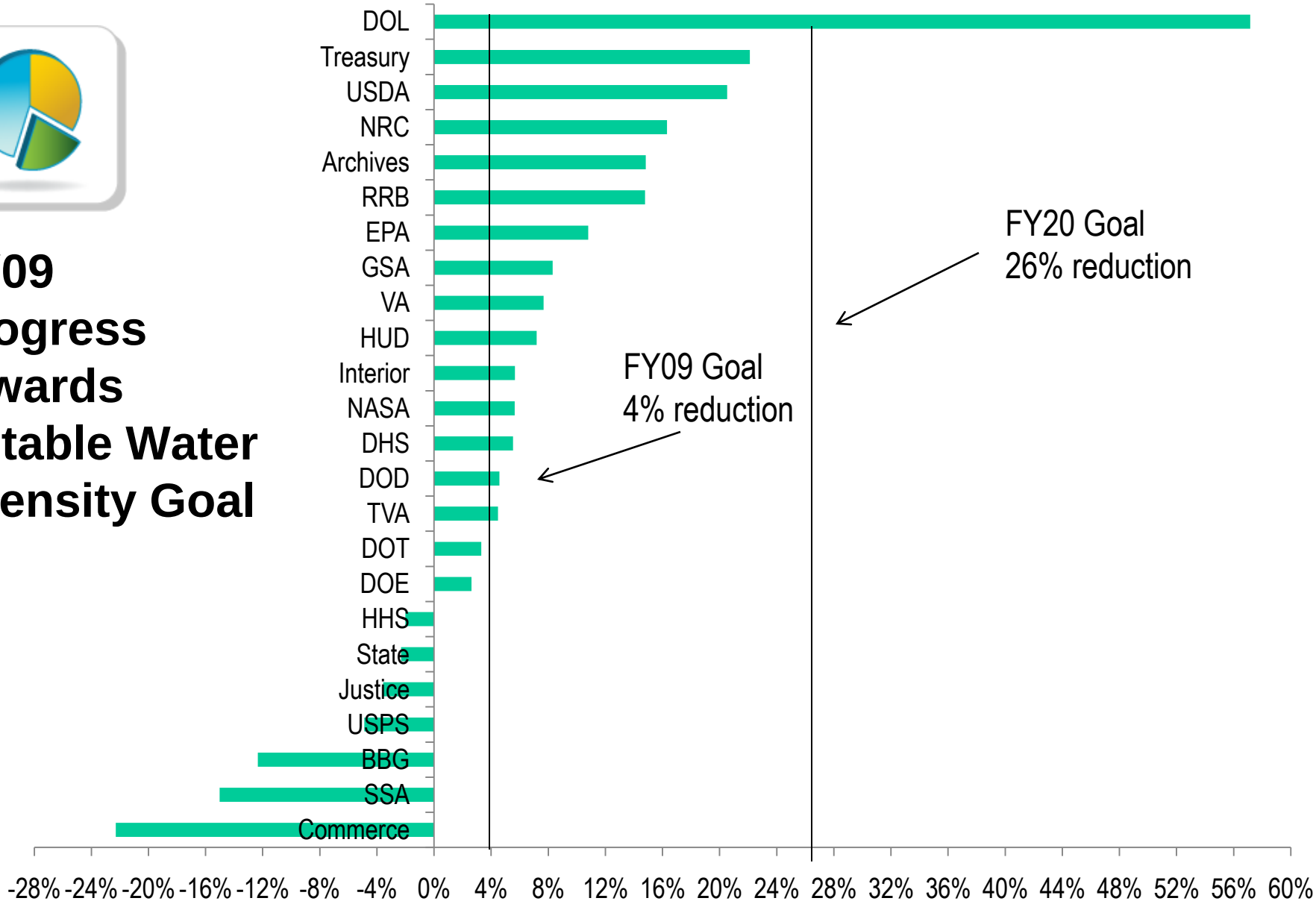
FY09 Federal Potable Water Use



FY09 Federal Potable Water Use Intensity



FY09 Progress towards Potable Water Intensity Goal



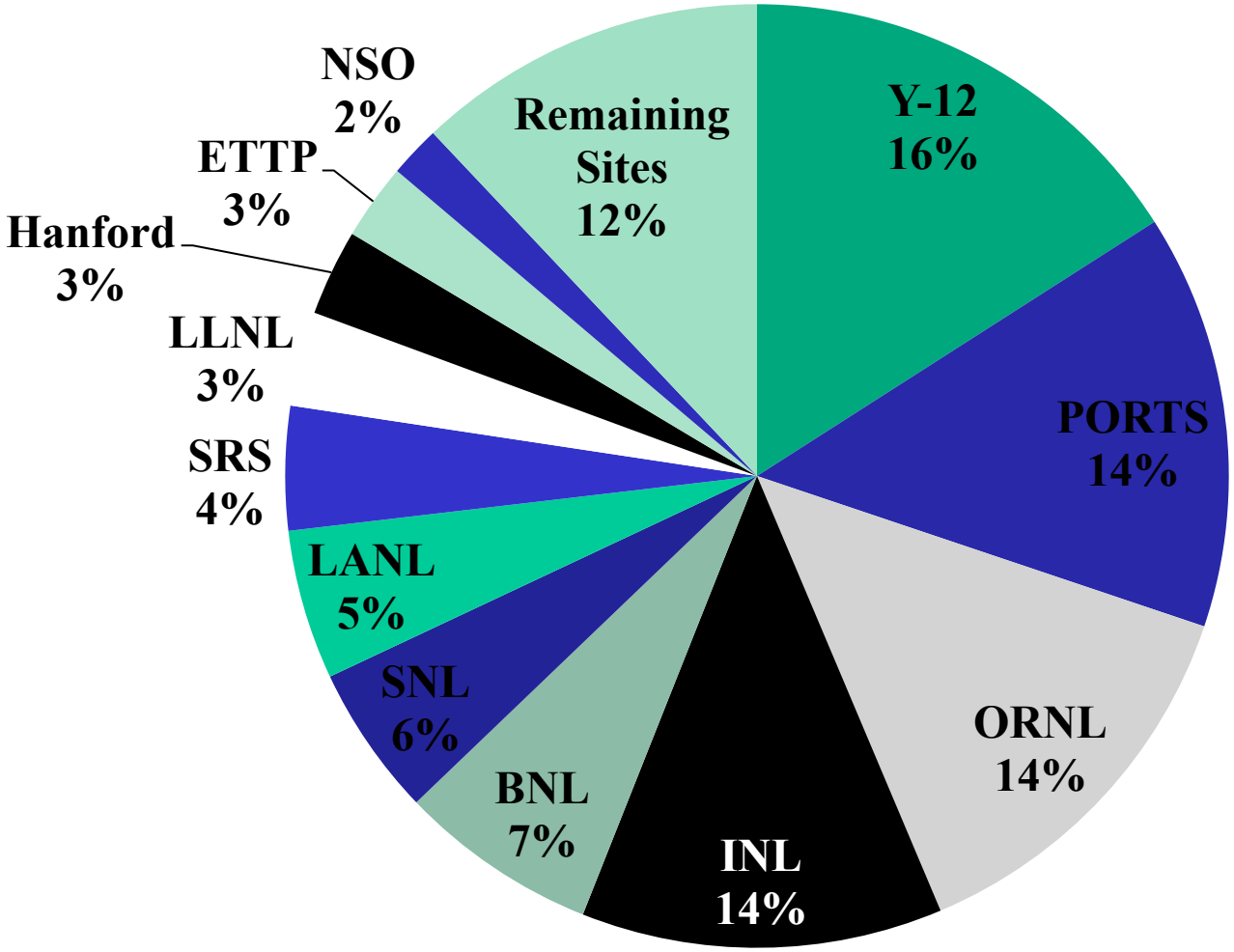
So, how is DOE doing?

- 4th largest user
- 3rd most intensive
- fell short of FY09 goal

How much water does DOE use?

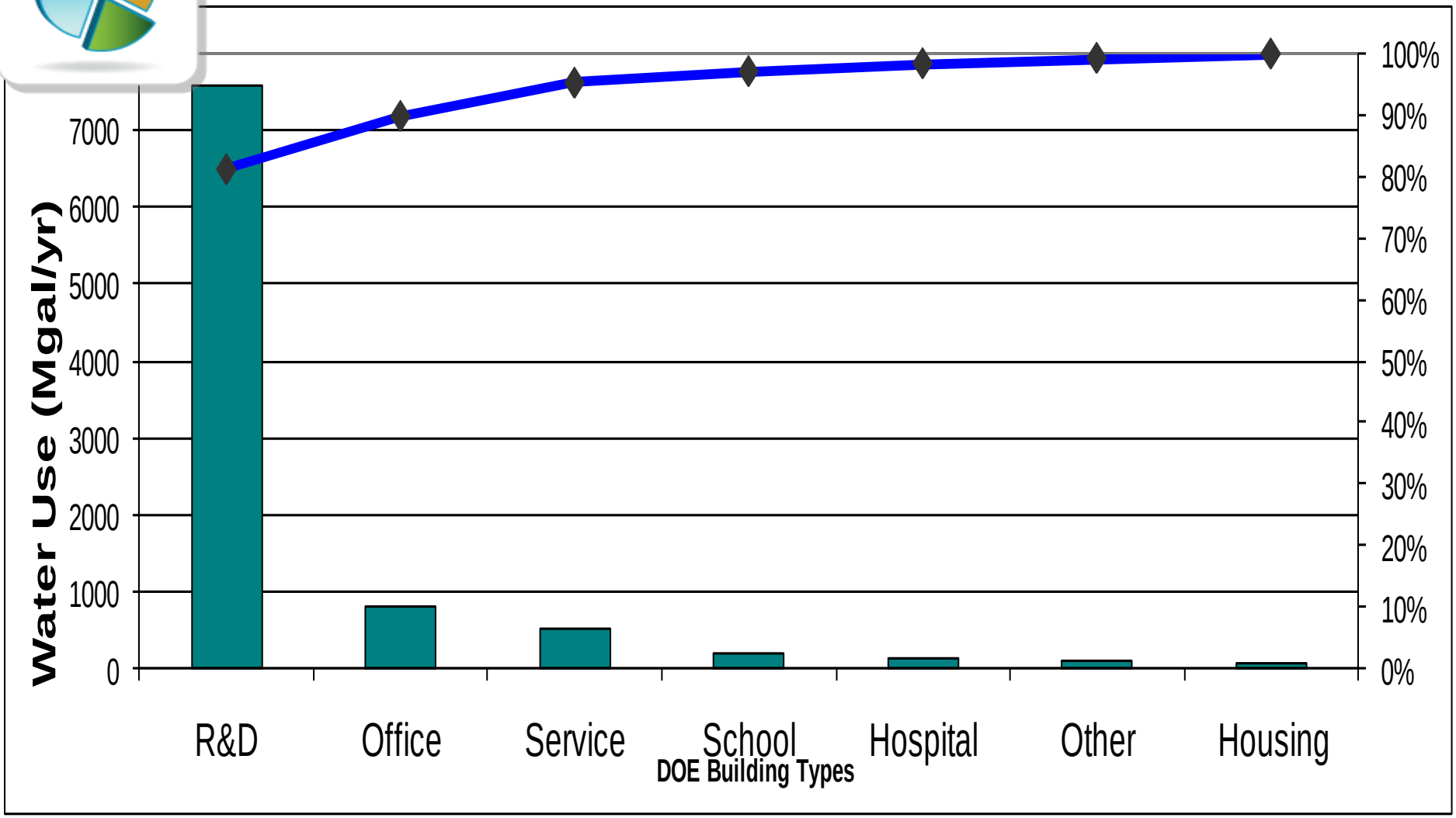
7.4 billion gallons in FY 2009

FY 2009 DOE Water Use Breakout



What is the predominant water use at DOE sites?

DOE Potable Water Use by Building Type



How do we track site level water use?

Facility Water Cycle

Water Utility

Consumer

Distribution System Leaks

Recycle/Reuse

End-Use

Sewage Treatment Facility

Discharge

Water Balance

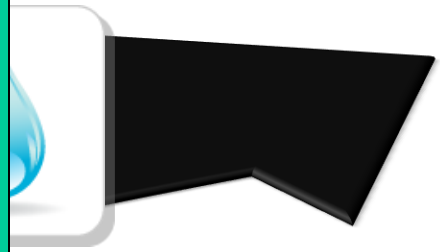
You can only manage what you measure!

Water Management Process

1) Where are you coming from?

2) Where are you now?

3) Where are you going and how will you get there?



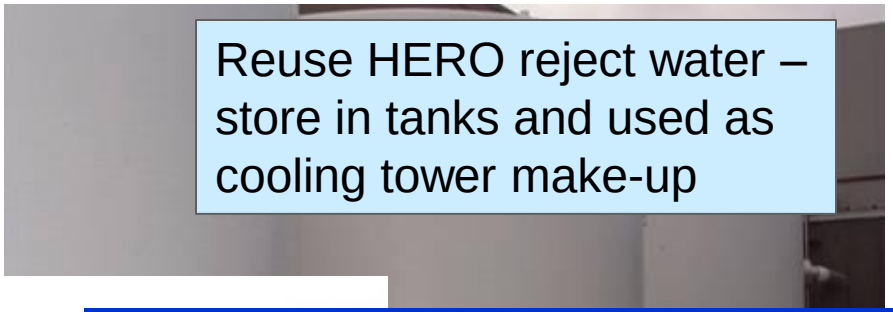
What to do if….

FEMP's 14 Best Management Practices:

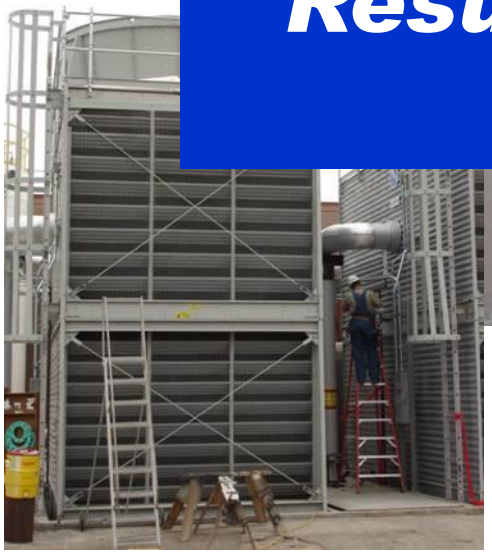
1. Water Management Planning
2. Information and Education
3. Leak Detection
4. Water-Efficient Landscape
5. Water-Efficient Irrigation
6. Toilets & Urinals
7. Faucets & Showerheads
8. Boiler/Steam Systems
9. Single Pass Cooling
10. Cooling Towers
11. Commercial Kitchens
12. Lab/Medical Equipment
13. Other Intensive Equip.
14. Alternate Water Sources

Case Study: Sandia National Laboratory Microelectronics Plant

Sandia National Laboratories



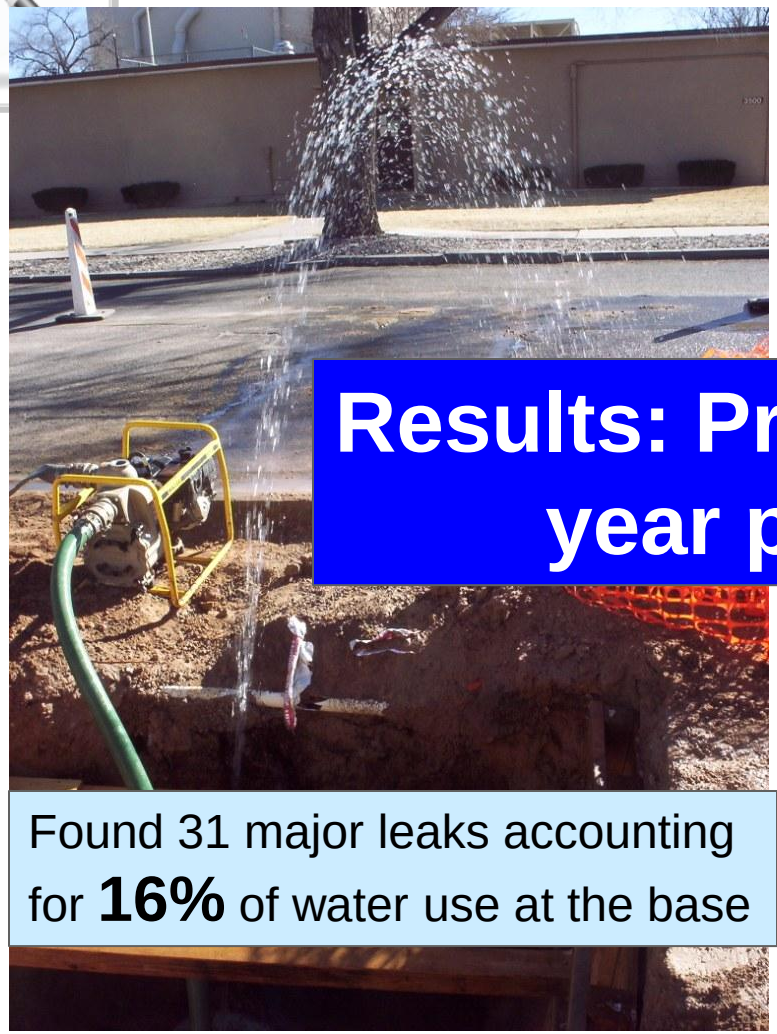
Reuse HERO reject water – store in tanks and used as cooling tower make-up



Large micro-electronics plant – HERO System with 90% recovery rate

Results: Annual saving over 140 million gallons

Case Study: Kirtland AFB Leak Detection and Repair



Found 31 major leaks accounting for **16%** of water use at the base

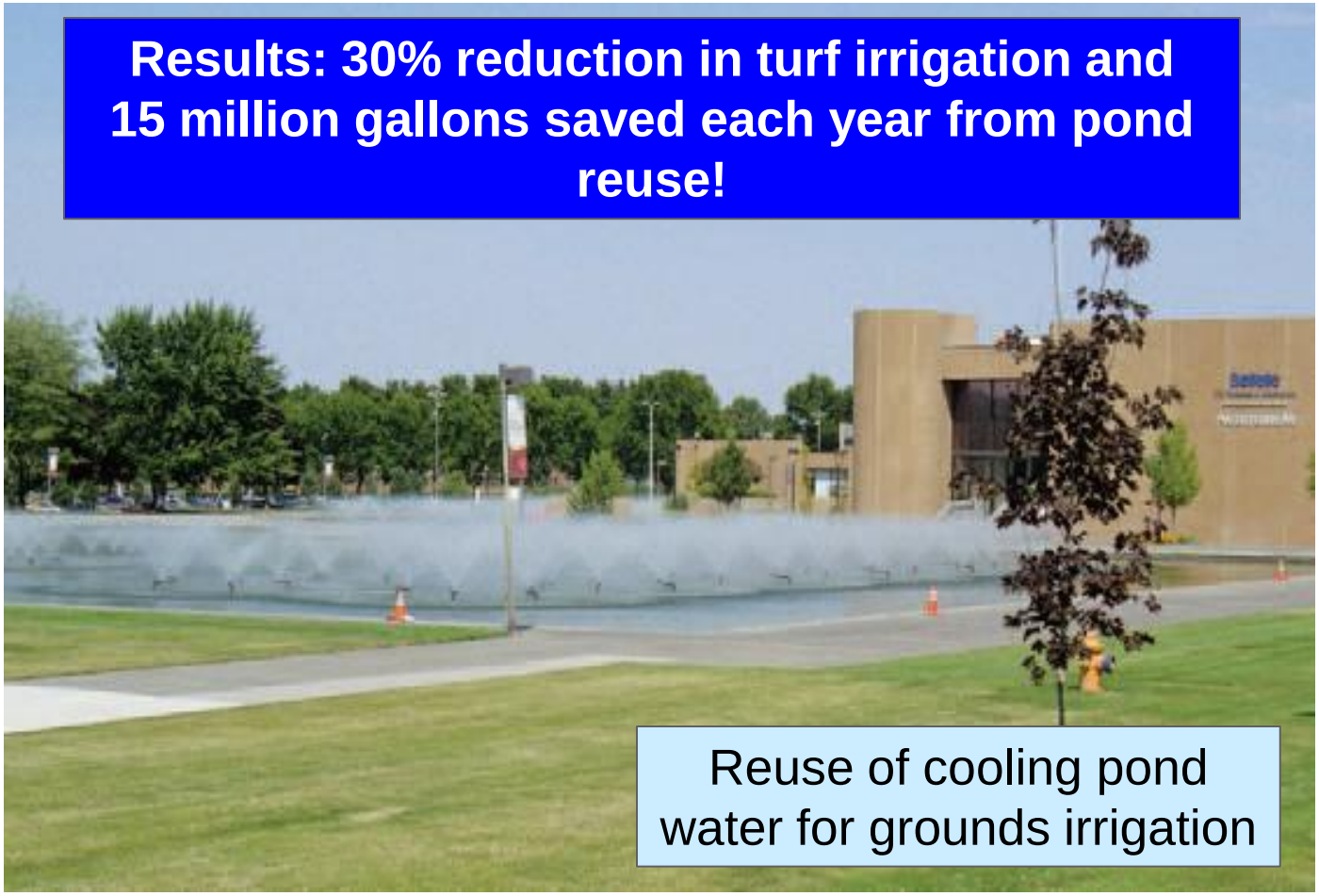
Over 108 miles of lines surveyed

Results: Project had 1.75 year pay back!

Case Study: Pacific Northwest National Laboratory Grounds Maintenance Program

Case Study: Pacific Northwest National Laboratory Grounds Maintenance Program

Results: 30% reduction in turf irrigation and 15 million gallons saved each year from pond reuse!



Reuse of cooling pond water for grounds irrigation

Case Study: Marshall Space Flight Center Water Efficiency Program

LEED for Existing Building O&M Certification

Results: 30% reduction in restroom water use and achieved 8 Water Efficiency LEED points

Implemented pint urinals ar high efficiency faucets

Native landscaping

What are the resources to help you save water?

EPA WaterSense

Water efficient labeling program backed by independent testing and certification

Tank Toilets

Private Lavatory Faucets

Flushing Urinals

Showerheads

www.epa.gov/watersense/

Web-Based Water Management Training

http://femptraining.labworks.org/

- Policy
- Planning
- Auditing
- Water Efficient Technologies
- Metering
- Project economics

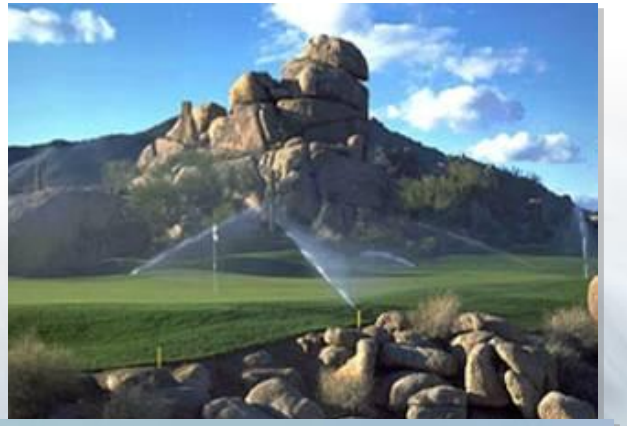
Training

- First Thursday Seminar

- Classroom course via GovEnergy:
  Sunday August 15
  http://govenergy.com/Events/Events.aspx

FEMP Products

- Guidance on estimating unmetered industrial water use and landscape irrigation
- Innovative strategies for cooling tower water management
- Water Reuse Fact Sheet



Where To Find More Information

FEMP:
http://www1.eere.energy.gov/femp/program/waterefficiency.html

- Federal directives and guidance
- Best Management Practices
- Training: http://femptraining.labworks.org/
- Resources
- Case Studies

EPA WaterSense: http://www.epa.gov/watersense/

Alliance for Water Efficiency: http://allianceforwaterefficiency.org

American Water Works Association: http://www.awwa.org/

California Urban Water Conservation Council: http://cuwcc.org/

Questions?

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FEMP Water Efficiency Program Website:
http://www1.eere.energy.gov/femp/program/waterefficiency.html