

BLM



WATER CONSERVATION AND MANAGEMENT

Water Conservation Mandates

Recent direction for all federal agencies:

- Energy Policy Act (EPAAct) of 2005
- Executive Order 13423
- Energy Independence and Security Act (EISA) of 2007

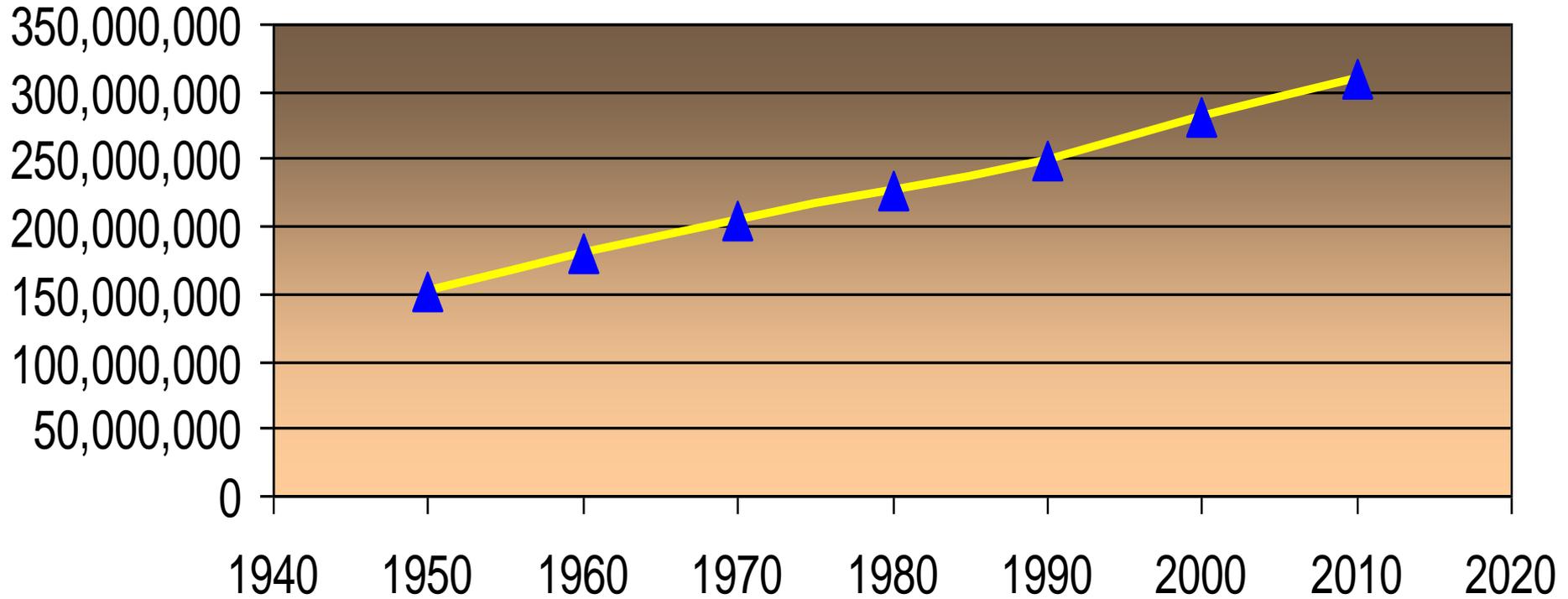
This training will enable you to:

- Possess knowledge of the mandated requirements and best practices for water conservation
- Contribute to water conservation and management plans
- Complete initial water management evaluations of assigned facilities
- Implement identified water efficiency measures

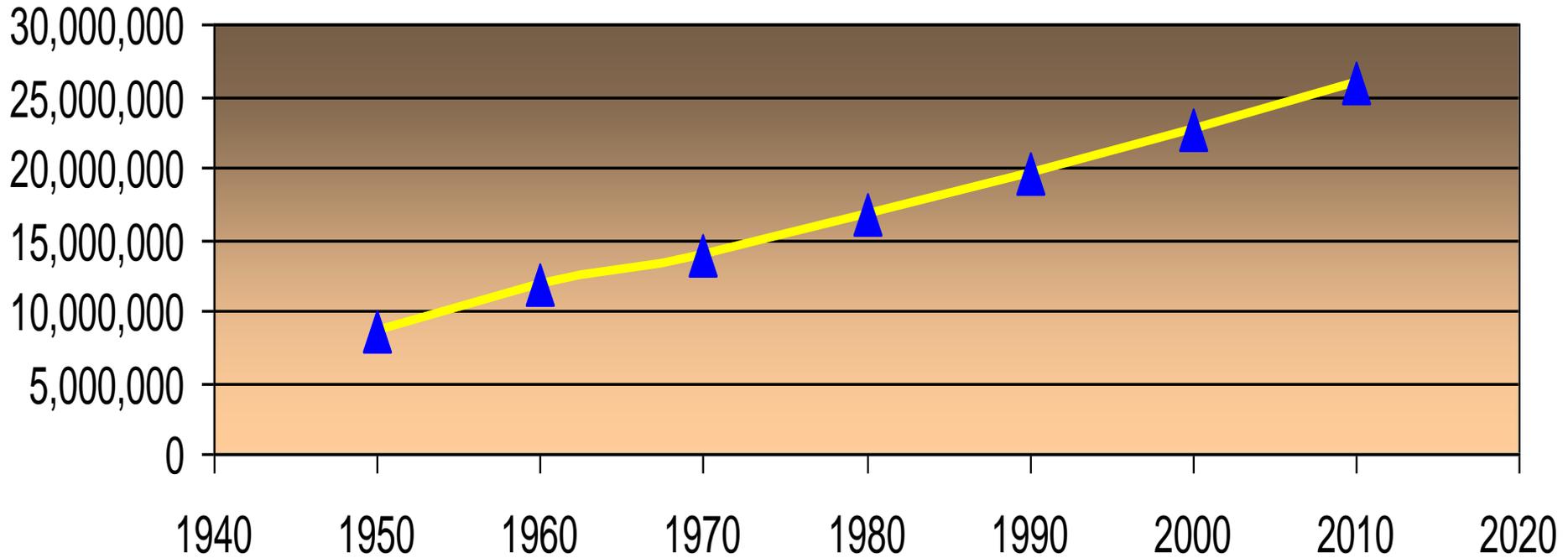
This training will enable you to:

- Develop and incorporate proven approaches and strategies to conserve water
- Recognize the most applicable Best Management Practices (BMPs) for typical BLM facilities
- Develop and implement a water conservation and management plan for assigned facilities.

US Population Growth



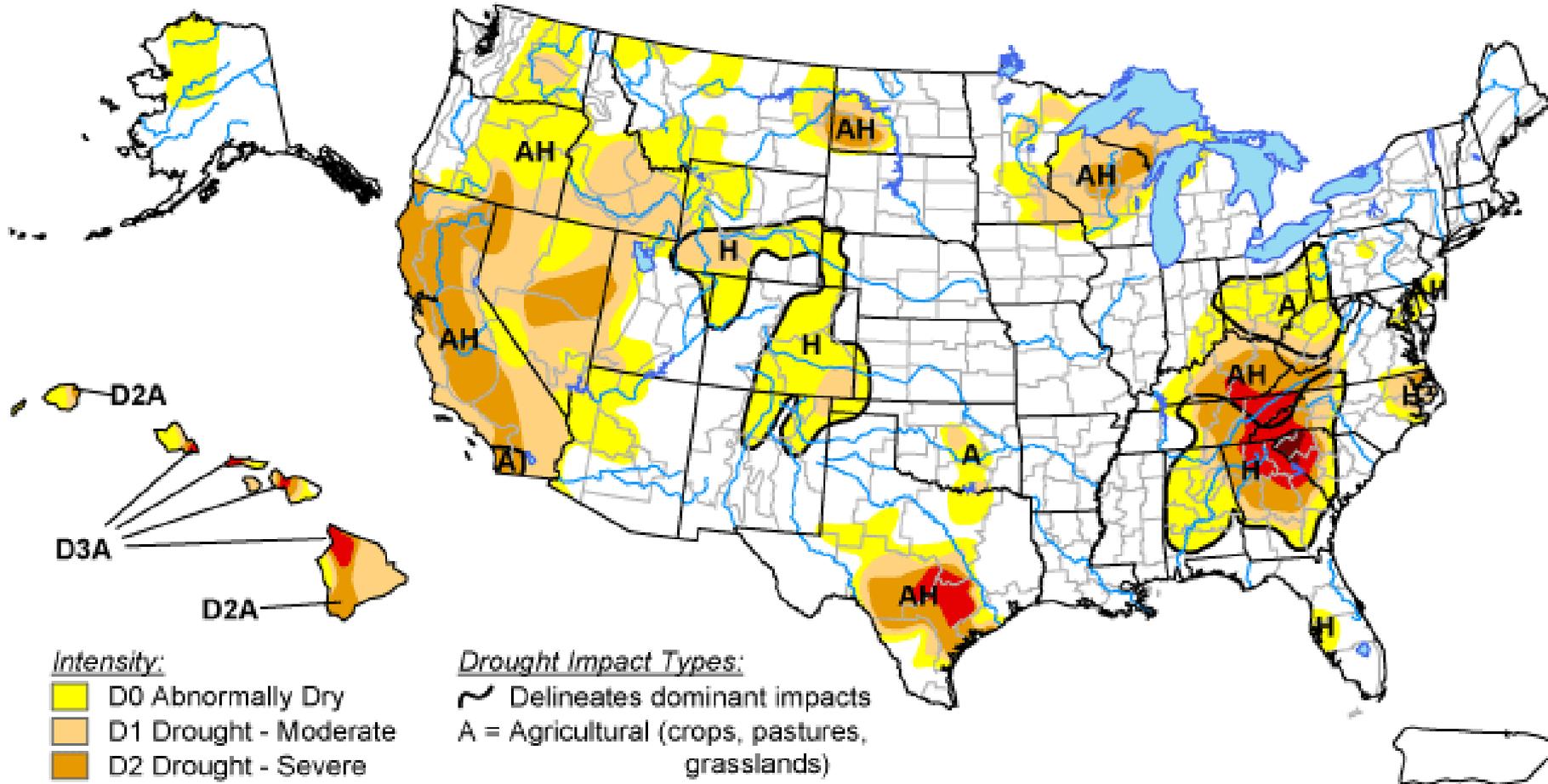
US Public Water Demand (ac-ft)



U.S. Drought Monitor

October 28, 2008

Valid 8 a.m. EDT



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:

- ~ Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://drought.unl.edu/dm>



Released Thursday, October 30, 2008

Author: David Miskus, JAWF/CPC/NOAA



Water Conservation Mandates

For all federal agencies, water conservation requirements are included in:

- Energy Policy Act (EPAct) of 2005
- Executive Order 13423
- Energy Independence and Security Act (EISA) of 2007

Water Conservation Benefits:

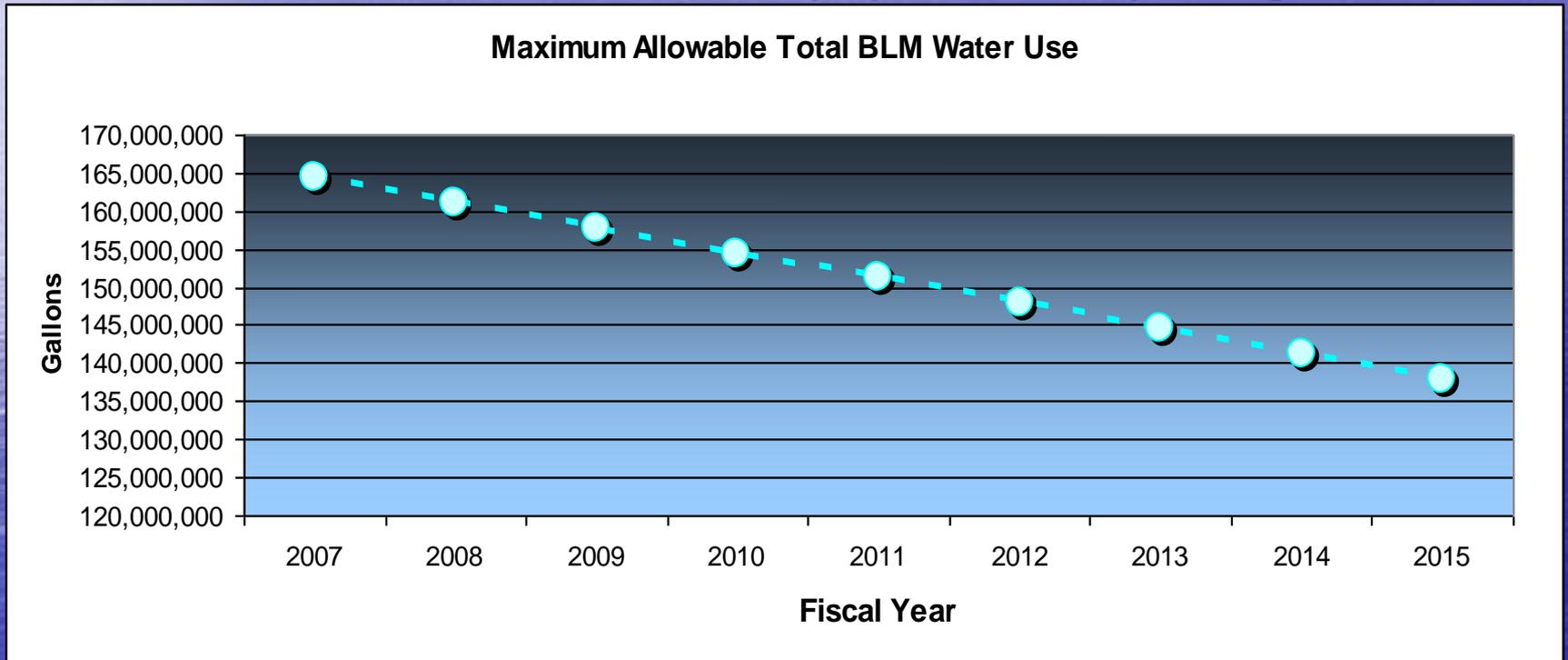
- Saves **Money**
 - Energy
 - Water supply
 - Wastewater
- Conserves **Resources**
- Protects the **Environment**

Executive Order 13423: Strengthening Federal Environmental, Energy, and Transportation Management

- Implement **water-efficiency measures**, including the purchase, installation, and implementation of water-efficient products and practices
- Determine “**baseline**” use in 2007
- Reduce water use intensity at **least 2% per year through 2015**

Mandatory BLM Target

EO 13423: Reduce Water Use Intensity by 2% Annually through 2015



(graph assumes constant total building space)

ENERGY MANAGEMENT SCORECARD
BUREAU: Bureau of Land Management

	CURRENT STATUS (As of September 30, 2008) ¹	PROGRESS	COMMENTS
<p>ENERGY MANAGEMENT</p> <p>Senior Bureau Official responsible for meeting the Energy Management Goals:</p> <p>DOI Initiative Lead: Mike Keegan/ Mary Heying</p> <p>DOI Initiative Executive: Nina Hatfield/ Debra Sonderman</p>	<p align="center"></p> <p align="center">Yellow</p> <p align="center">Next ↑ est. by (year)</p> <ul style="list-style-type: none"> Reduction in energy intensity in non-excluded facilities compared with 2003: <ul style="list-style-type: none"> ___ 6 percent and on track for 30 percent by 2015 (G) ___ 4 percent (Y) <i>Inaccurate 2003 Baseline data</i> Use of renewable energy as a percent of facility electricity use: <ul style="list-style-type: none"> <u>X</u> 1.5 percent from <u>new</u> sources (thermal, mechanical, or electric) AND total of 3 percent from renewable electricity sources (G) ___ 3 percent from any renewable thermal, mechanical or electric renewable energy source (Y) ___ Less than 3 percent from any renewable energy sources (R) Metering plan to meter energy use in 100 percent of appropriate facilities by 2012: <ul style="list-style-type: none"> <u>X</u> Meets 100% of metering plan milestones (G) ___ Meets at least 75% of metering plan milestones (Y) Reduction in water consumption intensity compared to 2007: <ul style="list-style-type: none"> <u>X</u> Has submitted final 2007 water baseline data (G) ___ Has submitted preliminary 2007 water baseline data (Y) Percent of new building designs begun in FY 2007 that are 30 percent more energy efficient than relevant code: <ul style="list-style-type: none"> <u>X</u> 100 percent (G) ___ 75 percent (Y) 	<p align="center"></p> <p align="center">Green</p> <p>Actions taken this 4th quarter:</p> <ul style="list-style-type: none"> Began audit of utility tracking spreadsheets indicating increased energy use & decrease in square footage. Implementation of Phase 2 of BLM's first Energy Saving Performance Contract (ESPC) for seven BLM states (CO, ID, MT, NV, OR, WA, WY). The ESPC will result in approximately a 15-20% reduction in energy use for the BLM-owned facilities to be audited (approximately 102 facilities). Completed phase 2 implementation of advanced metering. Installed 500W off grid system at the Sweet Alice Administrative site, UT <p>Planned actions for 1st quarter:</p> <ul style="list-style-type: none"> Continue to audit utility tracking spreadsheets to determine validity of data indicating increased energy use & significant decrease in square footage – scheduled to complete 2nd quarter of FY2009. Refining RFP for Phase 3 of BLM's first Energy Saving Performance Contract (ESPC) of energy efficient technologies in facilities in remaining BLM states (AK, AZ, CA, NM, UT, & the Helium facility in Amarillo, Texas) – anticipate award in Q2 FY2009. Procured equipment and anticipating installation of a 5kW grid connected PV system in Vale, OR, (weather permitting). Submit list of designated covered facilities required under EISA Sec 432 and associated energy manager assignments to PAM. 	<p>BLM is uncomfortable with the result of energy intensity metric, which shows an increase in energy intensity in 2007 when compared to FY2003. The result of this metric, runs counter to the improvements the BLM has made to become more energy efficient. Over the past two years, the BLM has retrofitted many buildings in 6 states (CO, ID, MT, NV, OR, and WY) to attain a green standards for which BLM received the President's Energy Conservation award. All new constructions are designed to improve energy intensity, which should reflect positively in the comparison to past year values.</p> <p>This leads BLM to be suspicious with validity of the data reported in FY2003 and concluding that baseline data has significant inaccuracy which render the resulting energy intensity metric as unrepresentative of the BLM performance in reducing energy consumption.</p> <p>The primary action being taken is to verify the energy intensity data for the baseline of 2003. Unfortunately, this effort requires verification of the original utility statements with the data reported originally. This internal audit of utility-usage data will be completed by Jan. 2009. The BLM will then be in a position to conclusively report the reduction in energy intensity for its non-excluded facilities.</p> <p>Because of the work done through the ESPC for energy savings and the uncertainty of the historical data BLM rates its performance as a yellow until more conclusive data can verify or refute this assessment.</p>

¹ Status is updated once annually (Jan 1) to reflect performance data collected at the end of each fiscal year on Bureau Annual Energy Data Report. Progress is assessed quarterly.

FEMP Best Management Practices (BMPs) for Water Conservation

1 - Water Management Planning

2 - Information and Education
Programs

3 - Distribution System Audits,
Leak Detection and Repair

4 - Water-Efficient Landscaping

5 - Water-Efficient Irrigation

FEMP Best Management Practices (BMPs) for Water Conservation

6 - Toilets and Urinals

7 - Faucets and Showerheads

8 - Boiler/Steam Systems

9 - Single-Pass Cooling Equipment

#10 - Cooling Tower Management

FEMP Best Management Practices (BMPs) for Water Conservation

#11 - Commercial Kitchen
Equipment

#12 - Laboratory/Medical Equipment

#13 - Other Water Use

#14 - Alternate Water Sources

EPA's WaterSense Program

Certifies and Labels

- Products

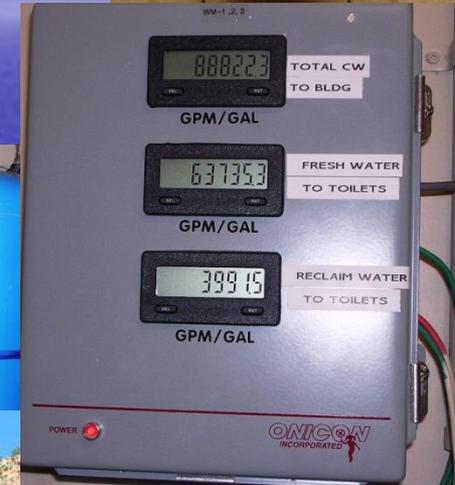
- Plumbing Fixtures (toilets, urinals, faucets, showerheads)
- Irrigation controls and products

- Irrigation Contractors



Escalante Interagency Visitor Center – Escalante, UT

- Native landscape material – no irrigation
- High-efficiency plumbing fixtures
- Waterless urinals
- Cooler bleed water used for toilet flushing
- Total water savings >50%



Energy Independence and Security Act (EISA) of 2007

- Comprehensive **evaluation** of water and energy use
- **Implementation** of cost –effective conservation and efficiency measures
- **Commissioning, measurement and verification**

BLM



*National
Operations
Center*



- Usage data from water & energy bills
- Professional assistance

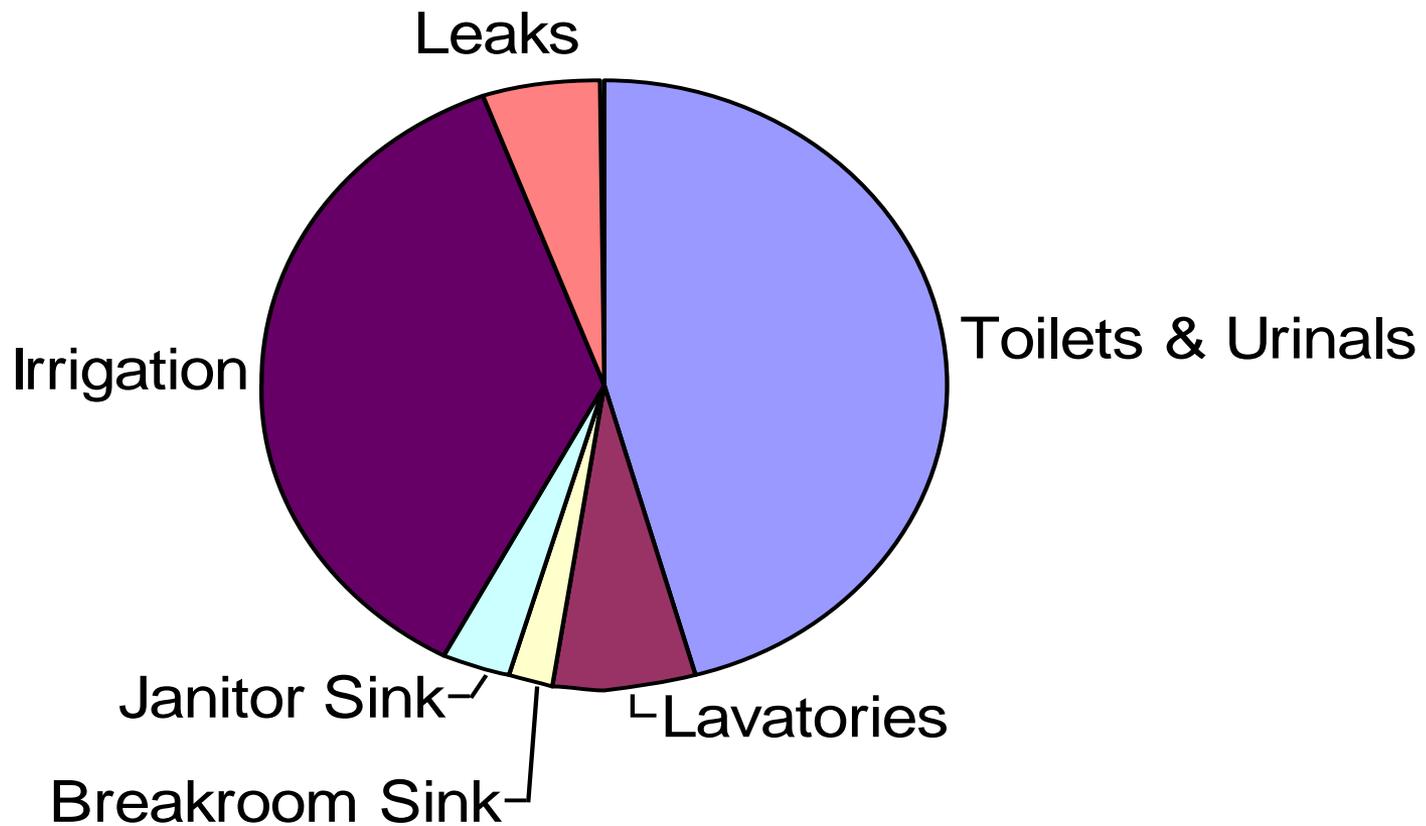


U. S. Department of the Interior
Bureau of Land Management



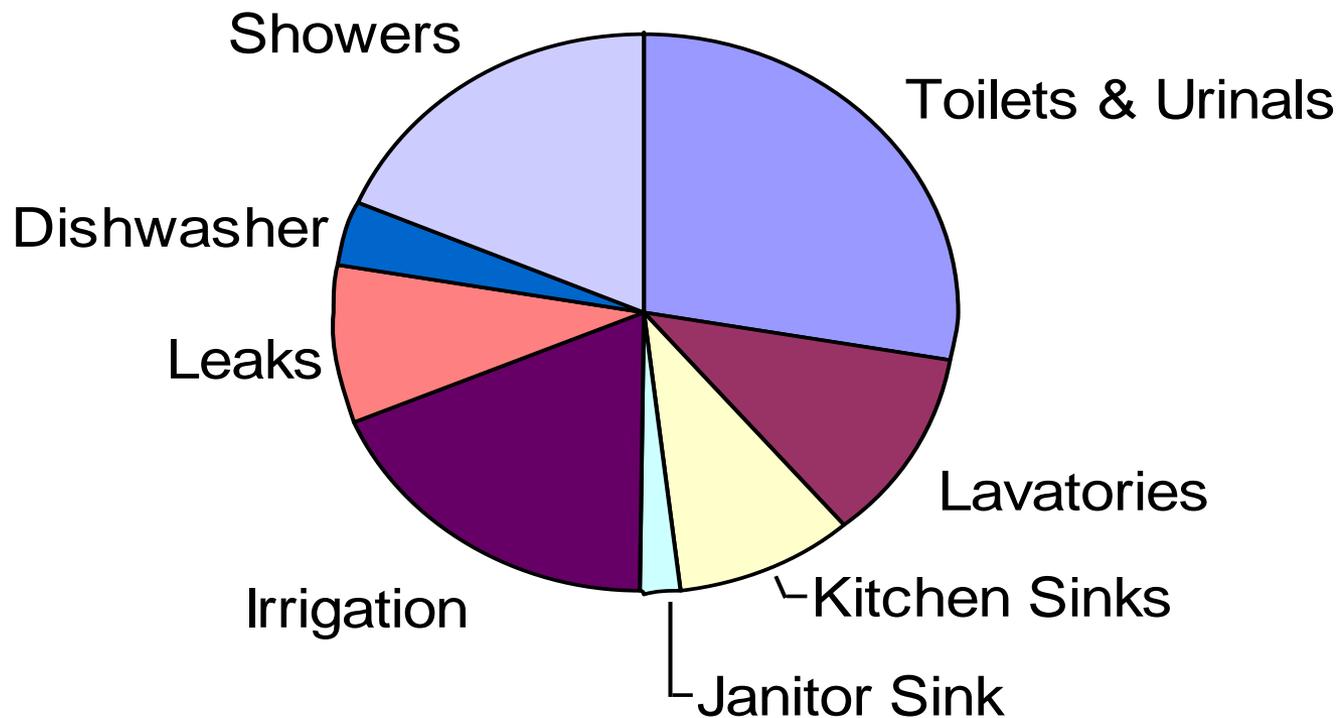
Typical BLM Example #1

OFFICE BUILDING USE



Typical BLM Example #2

FIRE CREW QUARTERS USE



Most Applicable BMPs

4 - Water-Efficient Landscaping

5 - Water-Efficient Irrigation

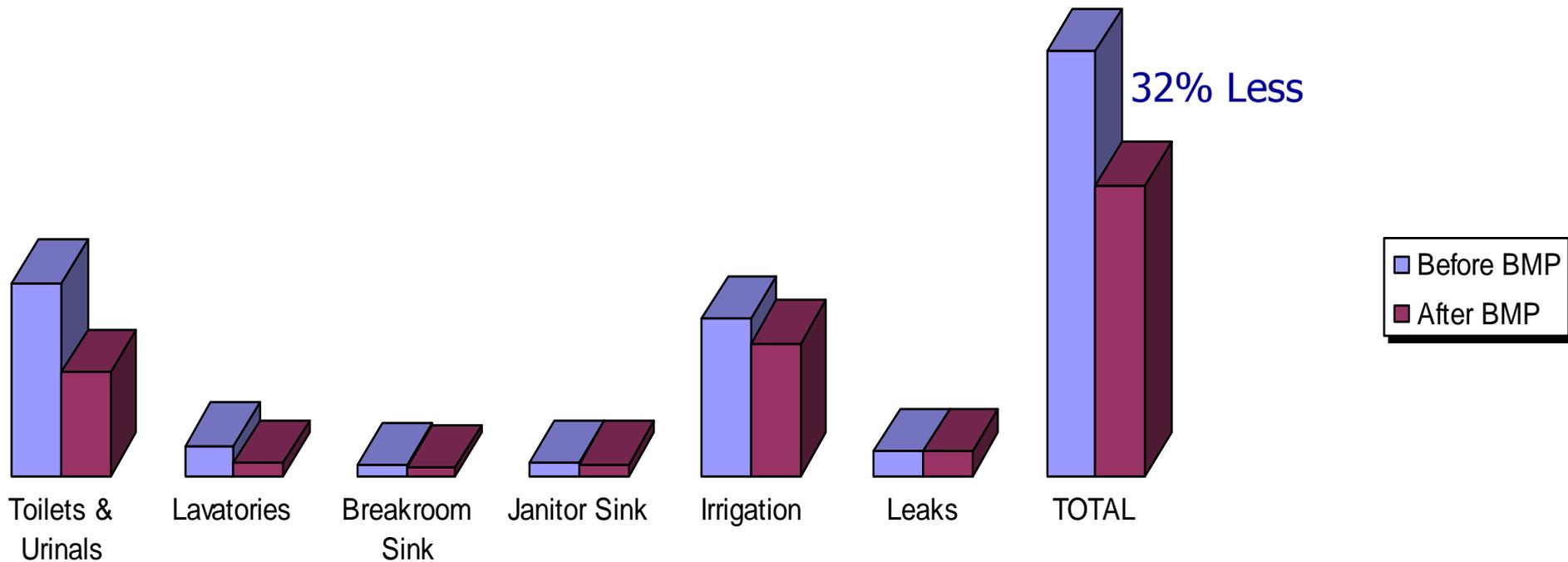
6 - Toilets and Urinals

7 - Faucets and Showerheads

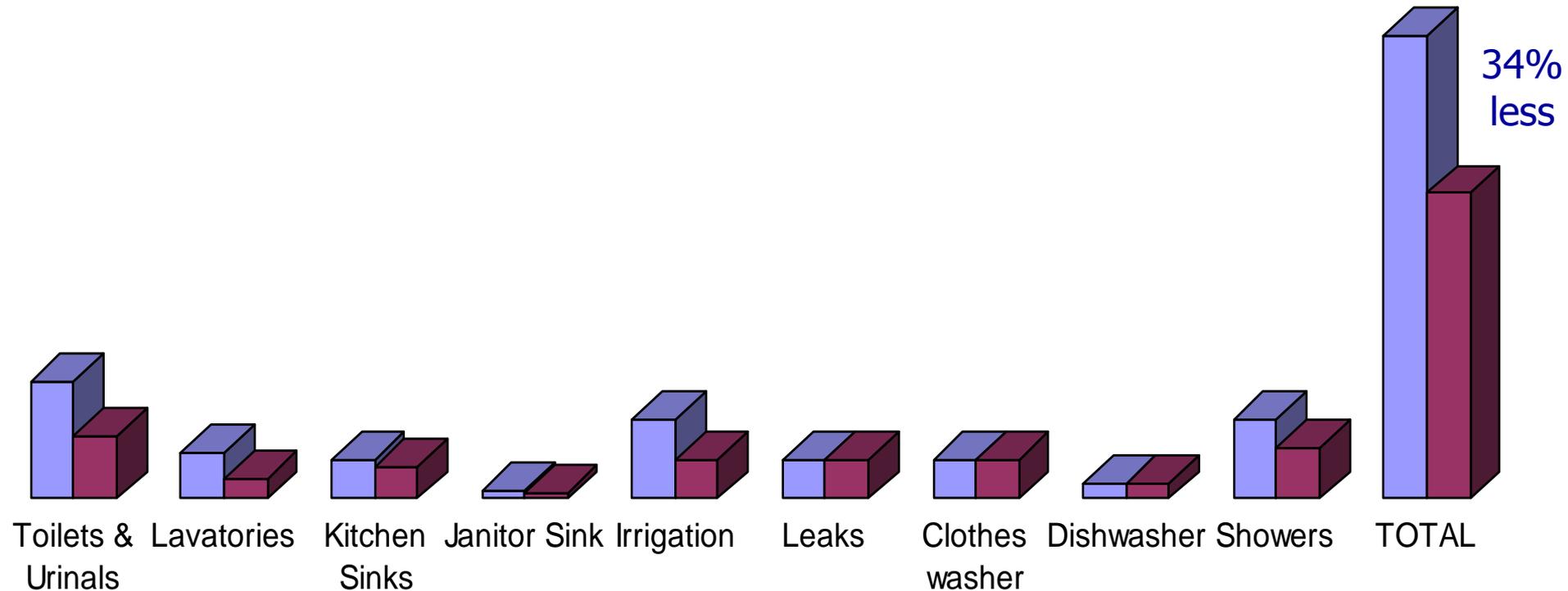


Example #1 Results

(office building)



Example #2 Results (fire crew quarters)



Useful Websites

- Federal Energy Management Program
Water Conservation

<http://www1.eere.energy.gov/femp/water/index.html>

- EPA Watersense

<http://www.epa.gov/WaterSense/>

- AWWA WaterWiser

<http://www.awwa.org/Resources/Waterwiser.cfm?navItemNumber=1561>



Local Utility Programs

- Area-specific expertise
- Financial incentives



What Can I Do?

- **Evaluate water uses** in your facility, office, home, and community to see whether appropriate conservation practices are in use
- **Find out who manages** your facility **and work with them** and your State Engineer to implement wise water conservation practices
- **Continue to educate yourself and others** in water and energy management!