

RECLAMATION

Managing Water in the West

WaterSMART Program

Sustain and Manage America's Resources for Tomorrow



U.S. Department of the Interior
Bureau of Reclamation

November 19, 2013

Overall Goal: Help Oklahomans meet Water for 2060 Goals and Objectives

1. Help you compete and win Reclamation funding to implement projects that advance water conservation, reuse, and desalination
2. Provide you with an understanding of one “template” for developing and implementing programs designed to achieve shared goals

Reclamation Background

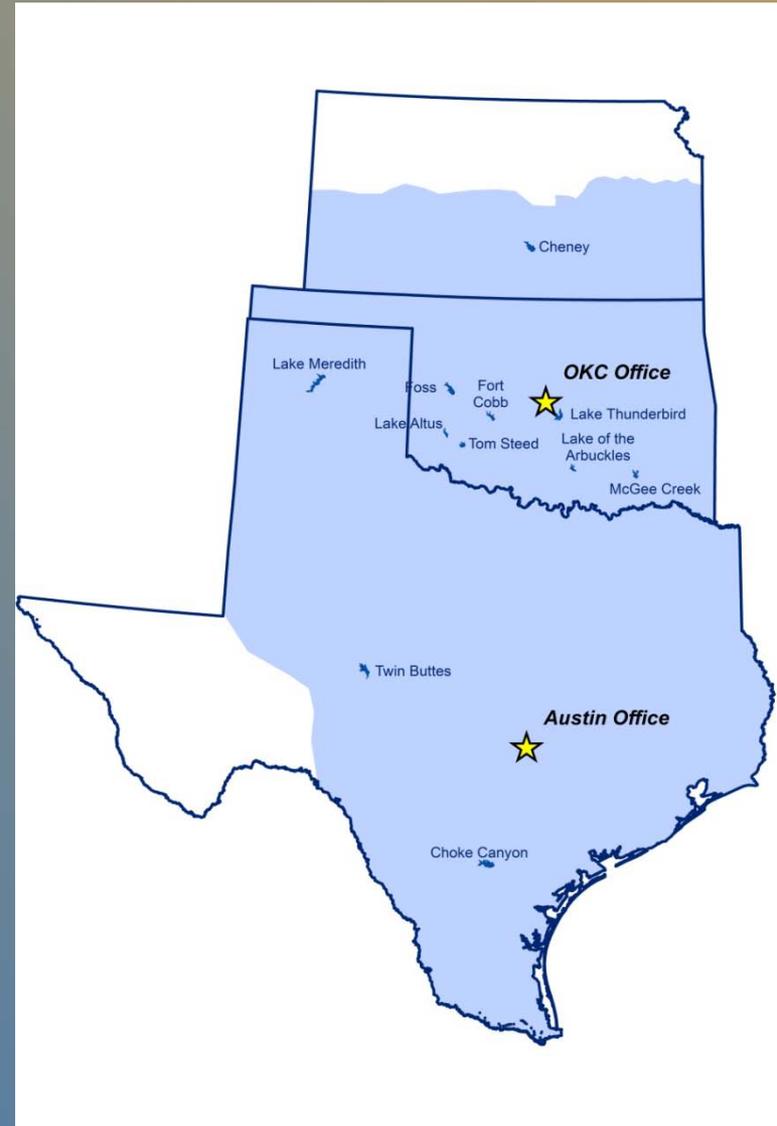
- Constructed more than 600 dams & reservoirs
- Provide water for 60% of nation's vegetables and 25% of fruits/nuts
- Provide drinking water to 31 million people annually
- 90 million visitor days per year
- The 2nd largest hydro producer, with 58 hydropower facilities producing 41 billion kwh



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Oklahoma-Texas Area Office

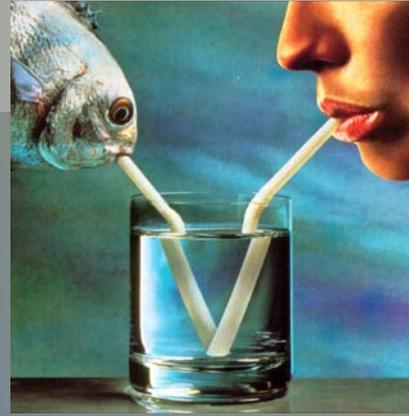
- 11 reservoirs with a total capacity of 4.2 million acre-feet.
- M&I - 539,000 acre-ft/yr to about 2.7 million customers.
- Irrigation – 111,000 acre-ft/yr for about 63,000 acres.
- 5 million visitor-days each year.



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What is the need?

- Aging infrastructure
- Rapid population growth
- Water shortage and use conflicts
- Impaired water quality
- Energy needs
- Environmental needs
- Climate-related risks



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WaterSMART: An Integrated Approach

- Immediate and short-term implementation strategies
 - On-the-ground conservation and efficiency
 - Water reuse and recycling
 - Desalination
- Long-term planning strategies
 - Basin-wide studies

Program Overview

- Funds awarded on a competitive basis
- Federal funding up to 50 percent
- Eligible entities have water management authority:
 - State water agencies
 - Municipalities
 - Regional/local water authorities
 - Irrigation and water districts
 - Wastewater districts
 - Rural water districts
 - Indian tribes or tribal organizations



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On-The-Ground Conservation & Efficiency Projects

“Water & Energy Efficiency Grants”

Federal Funding Caps

- Group I: \$300,000 - complete within two years
- Group II: \$1,000,000 to 1,500,000 - complete within three years

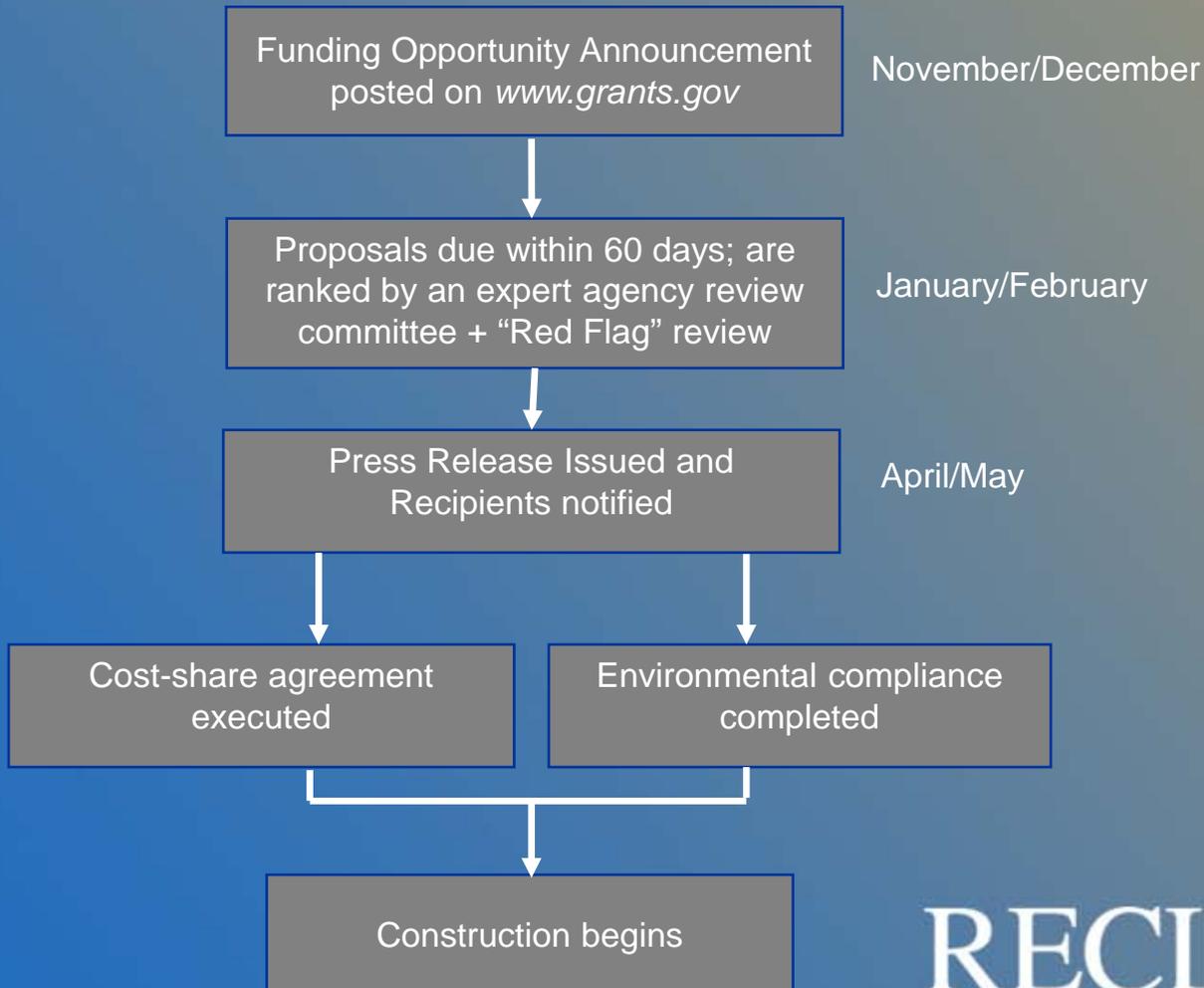
Types of Projects

- Canal lining/piping
- SCADA/automation
- Municipal metering
- High efficiency fixtures
- Groundwater recharge
- Water reuse and recycling
- Water-related renewable energy
- Retrofitting/modernizing pumps
- Water-related habitat restoration
- Water marketing/exchanges

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On-The-Ground Conservation & Efficiency Projects

“Water & Energy Efficiency Grants”



November/December

Funding Opportunity Announcement posted on www.grants.gov

*Announced last week!!!
Proposals due Jan 23, 2014*

January/February

Proposals due within 60 days; are ranked by an expert agency review committee + “Red Flag” review

April/May

Press Release Issued and Recipients notified

Cost-share agreement executed

Environmental compliance completed

Construction begins

- Non-Federal sponsor owns and operates project
- Minimal Federal oversight

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On-The-Ground Conservation & Efficiency Projects

“Water & Energy Efficiency Grants”

- Water Conservation (amount + %) 28 points
- Energy-Water Nexus 16 points
- Water Sustainability 14 points
- T&E Species Benefits 12 points
- Water Marketing 12 points
- Demonstratable Results 10 points
- Percent non-federal funding 4 points
- Connection to Reclamation project 4 points

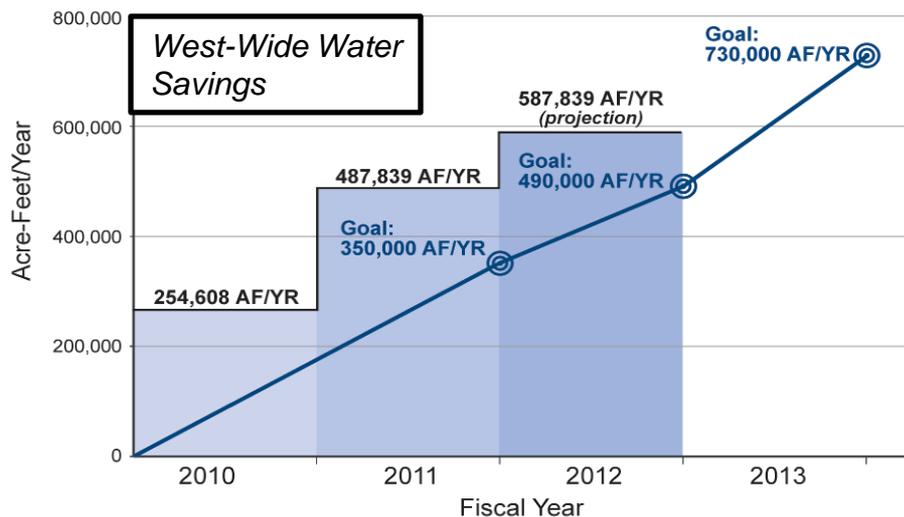
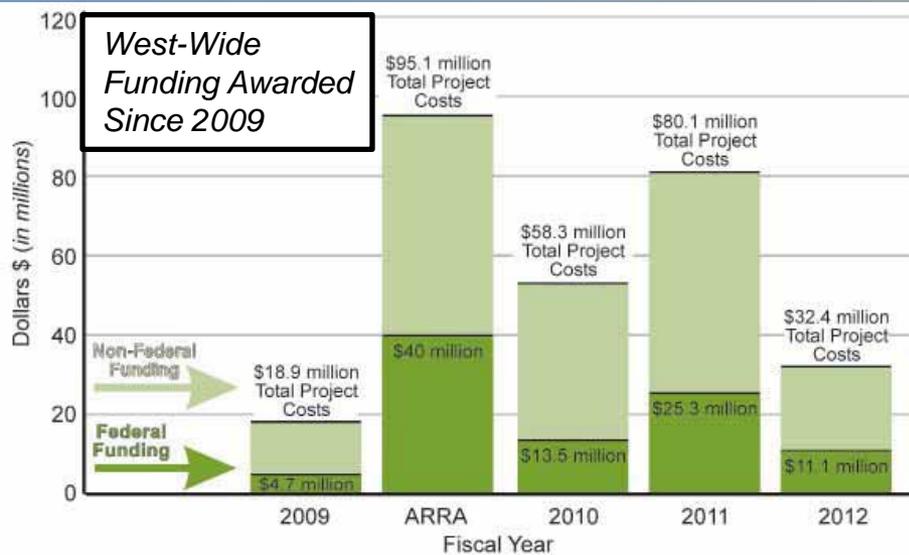
Total = 100 points

We are here to help!

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On-The-Ground Conservation & Efficiency Projects

“Water & Energy Efficiency Grants”



30 projects within the Oklahoma-Texas Area Office

- 28 projects in Texas
- 2 projects in Oklahoma
- \$8.5 million awarded
- \$22 million non-Fed match
- 55,600 acre-feet per year saved

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Desalination, Water Reuse and Recycling

- **Construction Options**
 - Water & Energy Efficiency Grants
 - Title XVI Grants
- **Research Options**
 - Desalination & Water Purification Research (DWPR Grants)
 - Science & Technology Research Program
- **Long-term Planning Options**
 - Basin-Wide Studies

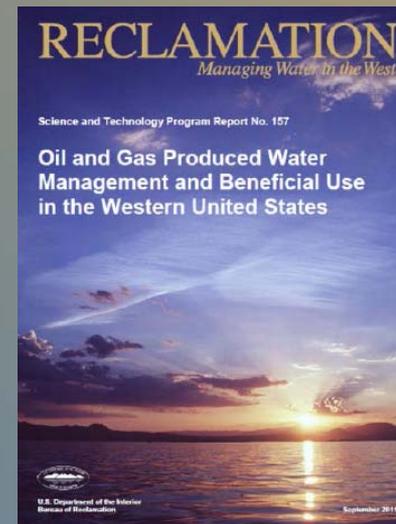
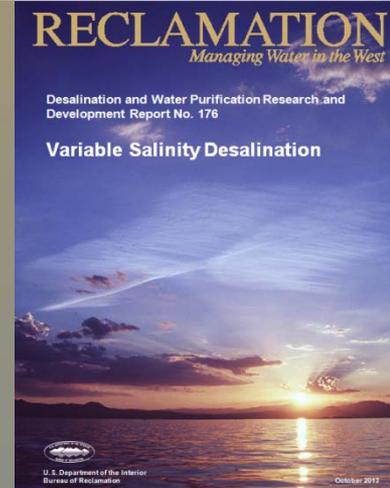
Desalination, Water Reuse, and Recycling Research

- **Desalination & Water Purification Research Program**
 - Funds transferred to another entity on a reimbursable basis
- **Science & Technology Research Program**
 - Funds used to support Reclamation expertise

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Types of Desalination, Recycling, and Reuse Projects

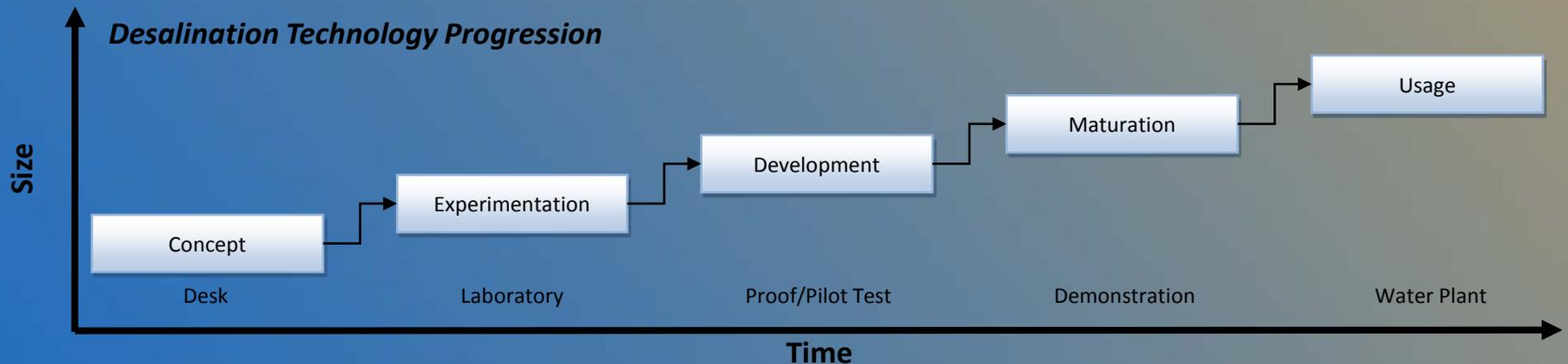
- **Desalination**
 - Brackish ground and surface water
 - Treatment/system optimization
 - Flexible desalination and smart controls
 - Renewable energy use and recovery
 - Brine minimization, recovery, and beneficial use
- **Water recycling and reuse**
 - Direct and indirect *potable* reuse
 - Produced waters from oil and gas production
 - Environmental buffers
 - Benefit/cost analyses



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Desalination & Water Purification Research Program

- Eligibility extends across U.S., not just West-wide
- Anyone can apply, including universities and private industry
- Up to 50 percent Federal funding; 100 percent for universities
- \$150,000 for research; \$200,000 per year for pilot testing



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Leveraging Reclamation Expertise in Desalination, Reuse, and Recycling

- Brackish Groundwater National Desalination Research Center, Alamogordo NM
 - Nine research bays up to 60 gpm of water
 - 1,000 to 6,400 TDS water available
 - 40-acre evaporation pond
 - Energy, chemicals, analytical, safety equipment



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Leveraging Reclamation Expertise in Desalination, Reuse, and Recycling

- Yuma Water Quality Improvement Center, Yuma AZ
 - Brackish surface and groundwater water research
 - Bench-, pilot-, and demo-scale units
 - Analytical laboratory
 - Fully staffed with engineers and operators
 - Mobile research available



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Leveraging Reclamation Expertise in Desalination, Reuse, and Recycling

- **Technical Services Center**
 - Engineers, chemists, scientists, technicians
 - Research and design
 - Bench- to demo-scale experience

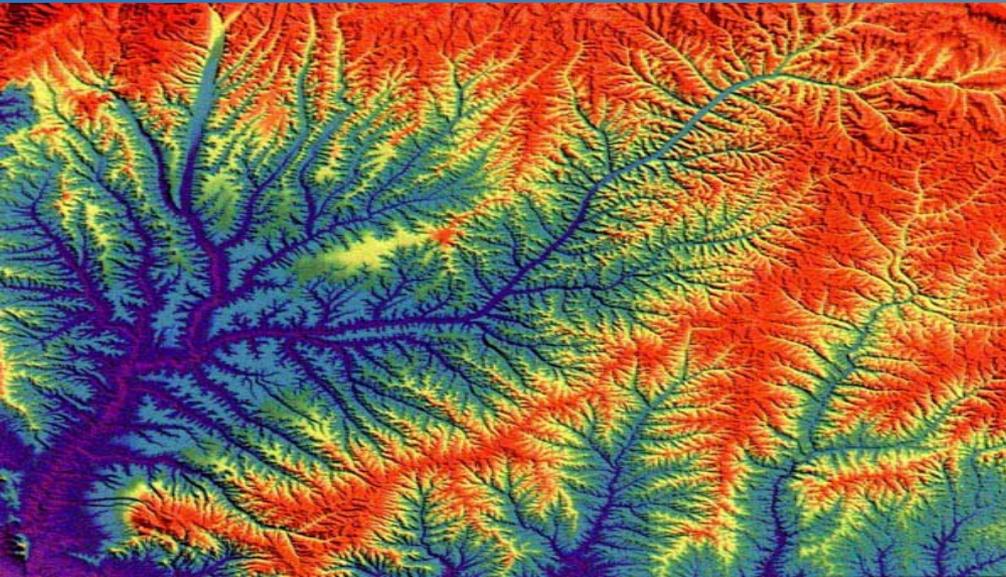


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Long-Term Planning

Basin-Wide Studies

- Long-term supply and demand evaluation
- System reliability and risk assessments
- Identification of water management strategies
- Trade-off analyses (cost/benefits)
- Findings and recommendations



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Long-Term Planning

Basin-Wide Studies

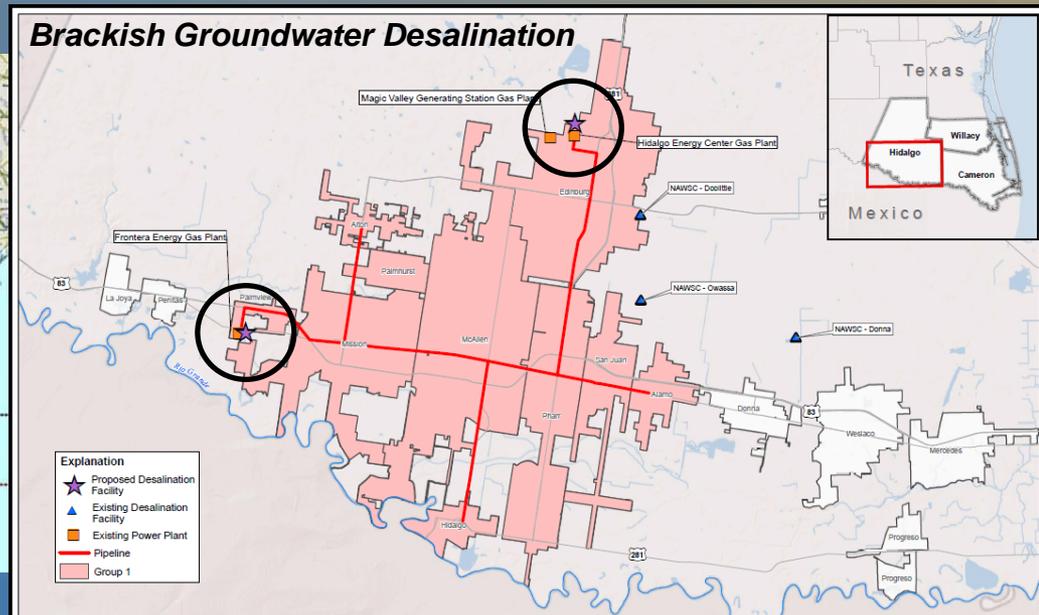
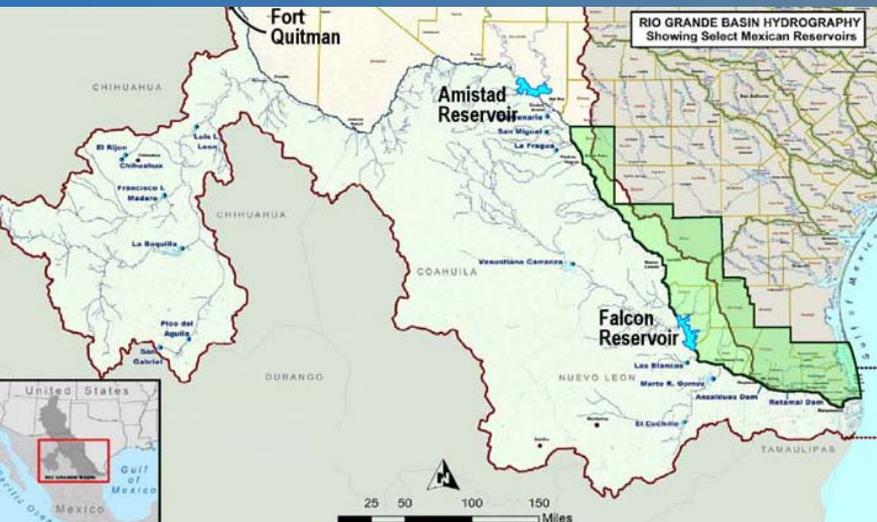
- Eligibility West-wide
- Only entities with water management authority are eligible
- Up to 50 percent Federal funding
- No funding cap (generally < \$1 million)
- Reclamation performs the work in partnership with sponsor
- Must be completed within three years

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Long-Term Planning

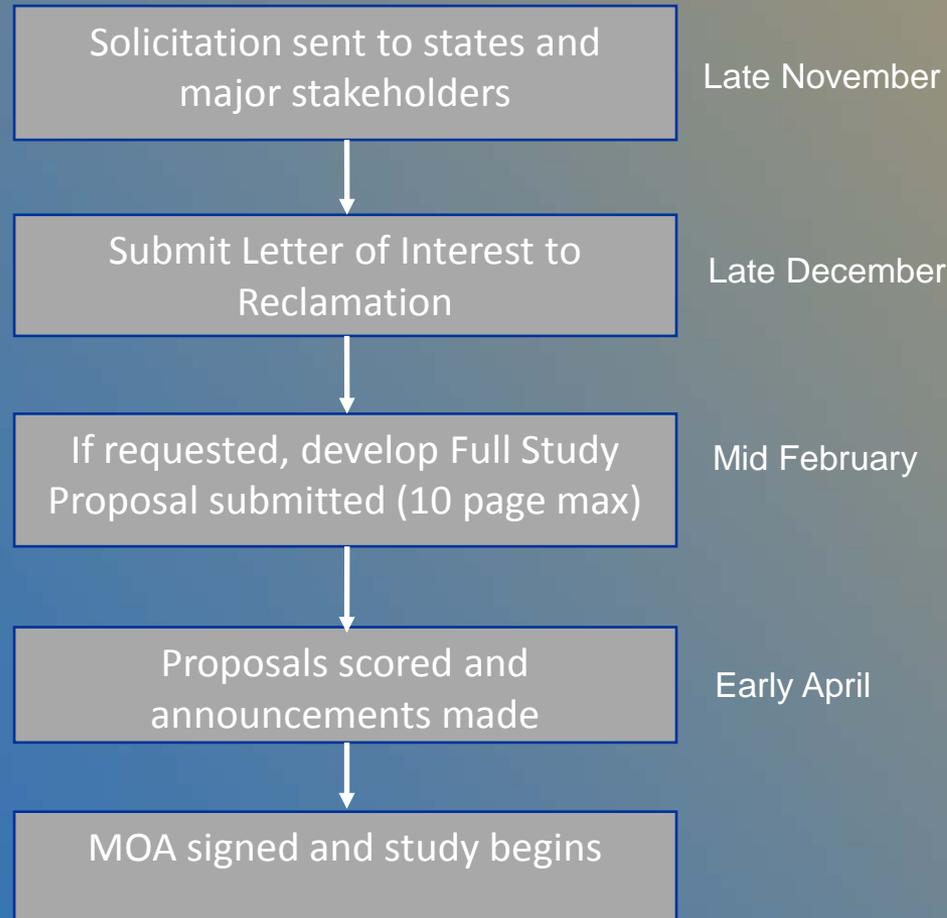
Basin-Wide Studies

- Case Study: Lower Rio Grande Valley Basin, TX
 - Water reuse
 - Seawater desalination
 - Brackish groundwater desalination
 - Importation of fresh groundwater



Long-Term Planning

Basin-Wide Studies



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Long-Term Planning

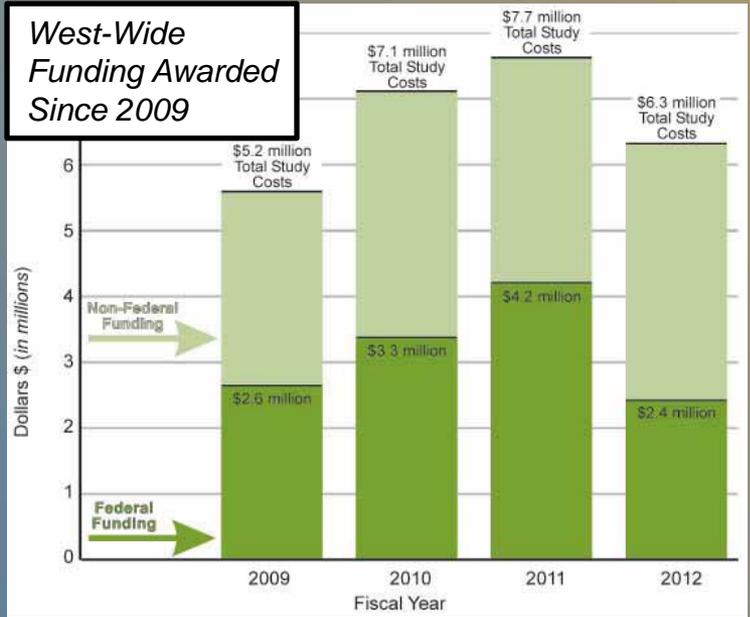
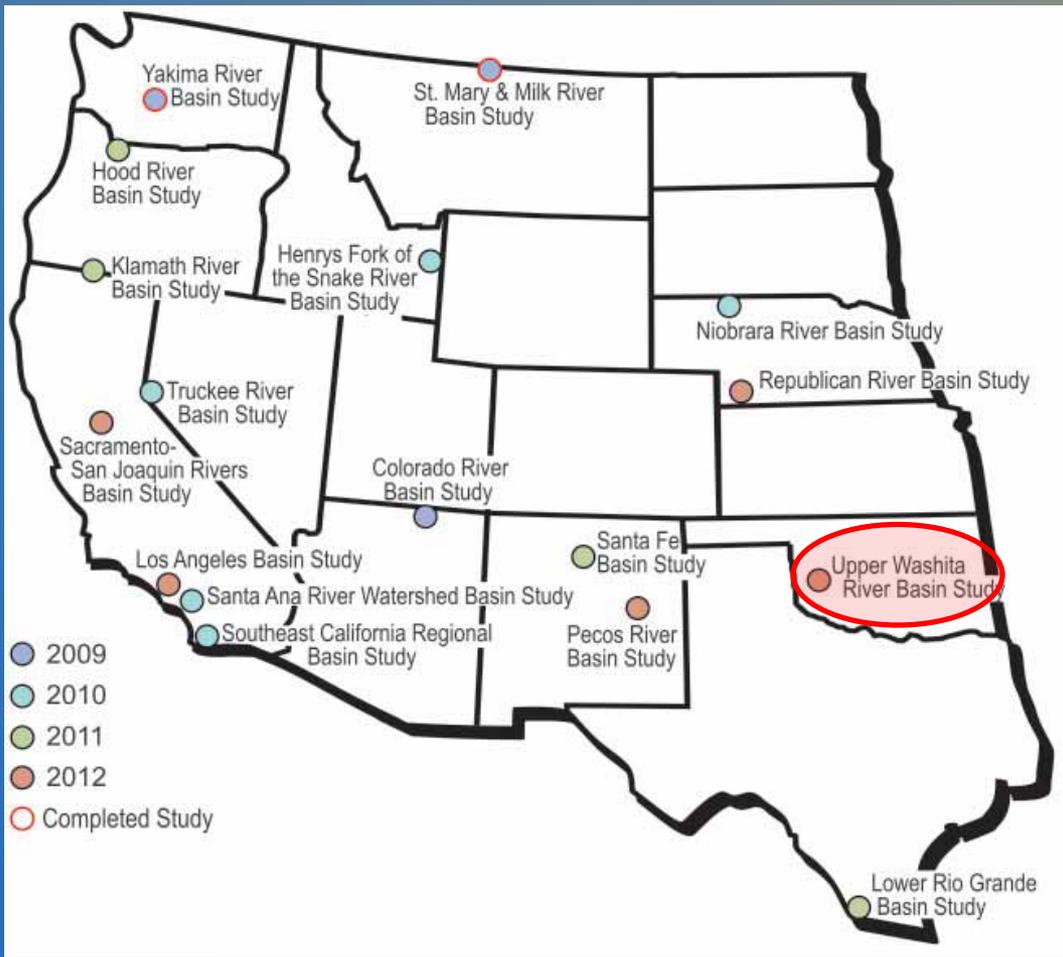
Basin-Wide Studies

- Water supply imbalances 30 points
- Ability to meet program requirements 25 points
- Need for Federal involvement 15 points
- Availability of existing data 15 points
- Stakeholder interest 10 points
- Non-Federal cost-share > 50% 5 points

Total = 100 points

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Long-Term Planning Basin-Wide Studies



To Learn More.....

- WaterSMART Program
 - <http://www.usbr.gov/WaterSMART/>
- WaterSMART Conservation & Efficiency Grants
 - <http://www.usbr.gov/WaterSMART/grants.html>
- Desalination & Water Purification Research Program
 - <http://www.usbr.gov/research/AWT/DWPR/>
- Science & Technology Program
 - <http://www.usbr.gov/research/programs/science-technology/index.cfm>
- Basin Studies Program
 - <http://www.usbr.gov/WaterSMART/bsp/index.html>

To Learn More...

Contact: Collins Balcombe, cbalcombe@usbr.gov, 512-899-4162

Health safety and reclaimed water

WHAT'S THE RISK?

A Comparison of Exposure to PPCPs from Recycled Water vs. Conventional Uses

This chart compares typical exposures to three Pharmaceuticals and Personal Care Products (PPCPs) — antidepressant, ibuprofen, hormone — with exposure to the same chemicals in recycled water under four different scenarios in which a person may come into contact with the water. For each scenario — child at play, agricultural worker, landscaper, and golfer — the chart shows how many years one could participate in that activity before reaching a single daily dose of the chemical from typical exposures.

Number of years of exposure to recycled water to equal conventional dose.



KEY: Four common scenarios where people may come into contact with recycled water.



Child at Play



Ag Worker



Landscaper



Golfer