Efficient Use of Water

Through Financial Incentive Programs

Department Of Water Resources

Baryohay Davidoff
600,000 people and over 200,000 homes per year

Impacts housing, education, transportation, energy, environment, water
Disposition of Average Annual Water Supply 1990

- Environmental: 24 MAF (28%)
- Irrigated Agriculture: 24 MAF (28%)
- Urban: 6 MAF (7%)
- Other Outflow: 36% (30 MAF)
- Other Uses: 1 MAF (1%)
CA Water Demand
(developed water)

- Urban: 20%
- Environmental: 3%
- Agriculture: 77%
California Water Plan

Key Initiatives:

- Integrated Regional Water Management
- Statewide Water Management

Vital Economy
Healthy Environment
High Standard of Living

Implement Integrated Regional Water Management
Improve Statewide Water Management Systems

Use Water Efficiently
Protect Water Quality
Support Environmental Stewardship
Water Use Efficiency Works

• The California Water Plan: by 2030:

• Urban 1.1 - 3.1 MAF/Y
• Agricultural 0.5 - 0.8 MAF/Y
• Recycling 0.8 - 1.4 MAF/Y
Water Use Efficiency

Financial Incentive Program:

Loan Program
Grant Program
Agricultural Water Conservation Loan Program

- **Applicant:** Public agencies and incorporated mutual water companies

- **Projects:** Agricultural capital outlay measures to increase water savings and improve water use efficiency

- **Funding:** Up to $5 million per eligible project

- **Due Date:** continuous

- **Total Program Funds:** $35 million for agricultural projects

- **Total Funds Available:** $15 million
## Water Use Efficiency Grants

- $12 million in 2001
- $10 million in 2002
- $18 million in 2003
- $28 million in 2005
- $35 million in 2007
- $30 million in 2008

- Prop 50 $50 million each year for Desalination over the next 2 years
Proposition 50 WUE Grant
Program Goals

• Benefits:
  – Water Savings
  – In-Stream Flow & Timing
  – Water Quality Improvements
  – Energy Efficiency
  – Other Benefits
Selection and Funding Process

- **PSP criteria**
  - Minimum score of 70
  - Ag & Urban
    - 50% of total funds
    - 25% R&D & 75% implementation
  - Locally cost effective- 10% of funds
  - Cost share based on State & local benefits
  - Cost share required for Implementation projects; encouraged for section R&D
    - Waived for disadvantaged communities
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<td>Proposals received</td>
<td>116</td>
<td>40</td>
<td>210</td>
<td>60</td>
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<tr>
<td>Total $ requested</td>
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<td>$8.9 million</td>
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<td>53</td>
<td>12</td>
<td>29</td>
<td>25</td>
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<tr>
<td>Ag:</td>
<td>23</td>
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<td>$11.8 million</td>
<td>$1.1 million</td>
<td>$9.8 million</td>
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<td>Total Ag Projects</td>
<td>$5,923,744</td>
<td>$499,930</td>
<td>$719,000</td>
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<td>Total Urban</td>
<td>$5,883,250</td>
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<tr>
<td>Program</td>
<td># Projects</td>
<td>Type</td>
<td>Est. Annual Water Savings *</td>
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<td>----------</td>
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<td></td>
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<tr>
<td>2001 (SB23)</td>
<td>23</td>
<td>Ag</td>
<td>14,800</td>
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<td>2002 (Prop 13)</td>
<td>23</td>
<td>Urban</td>
<td>5,700</td>
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<td>2003 (Prop 13)</td>
<td>25</td>
<td>Urban</td>
<td>13,200</td>
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<td>Subtotal</td>
<td>100</td>
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<td>79,600</td>
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* Real and applied water savings
## Statistics - funding

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<tr>
<th>Category</th>
<th>Available</th>
<th>Recommended</th>
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<td>$12,671,249</td>
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<td>Agricultural R&amp;D</td>
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<td>$4,223,942</td>
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<td>$16,894,998</td>
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<td>$12,671,249</td>
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<tr>
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<td>$4,223,942</td>
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<tr>
<td>subtotal</td>
<td>$16,894,998</td>
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<tr>
<td>Total</td>
<td>$33,789,996</td>
<td>$28,132,982</td>
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**Local Match:**
- Ag: $5.2 million
- Urban: $16.9 million
2005 Prop 50 Ag Grants

- Feasibility Study (Reservoir/Irrigation Improvements) 17%
- Irrigation Technology Study 7%
- Irrigation Management Study 17%
- Flow Monitoring 10%
- Irrigation Water Re-Use 10%
- Canal System Improvements 19%
- Canal Lining 7%
- Resource Assistance (Info Directory/Demo/ Mobile Lab/Workshop) 13%

30 Projects
Prop 50 2005 Urban Grants

- Conservation Research (Residential/Commercial) 17%
- Landscape Irrigation Improvement 13%
- Meter Installation 8%
- Retrofit or Rebate (Residential/Commercial) 25%
- Resource Assistance (Education/Awareness/Demo Garden) 37%

48 Projects
Definition of Local Cost-effectiveness

Local Annual Monetary Benefits > annual costs ➔ Locally cost-effective

Local Annual Monetary Benefits < annual costs ➔ Not locally cost-effective

Local benefits are avoided cost of water supply, water treatment, labor, etc.
2005 Prop 50 Funding Summary

- **Ag Implementation:**
  - State share $7,513,849
  - Applicants’ share $18,200,981

- **Urban Implementation:**
  - State share $12,671,249
  - Applicants’ share $15,137,800
Prop 50 Previously Ag Funded Projects

Ag Implementation Funded (11)

- Canal Lining (6)
- Spill and Tailwater Recovery System (1)
- Automate Canal Structure (2)
- Evaluate and Improve Water Efficiency (2)
Prop 50 Previously Urban Funded Projects (by category)

Urban A Funded (25)

- Residential Plumbing Retrofit/Rebates (8)
- Commercial, Industrial, Institutional Conservation (4)
- Large Landscape Conservation (8)
- System Audits (1)
- Metering (4)
Examples of ag and urban funded projects
Deer Creek Irrigation District

• State Benefit: DIRECT.
• Reduce recoverable loss and decrease diversions from Deer Creek during Salmon migration (TB and QO)

• Local Benefits: structural improvements, flexibility

SUMMARY

- replace and automate canal diversion gates, install canal “Y” structure and SCADA to improve system efficiency

MONITORING: Pre and post project monitoring

ANTICIPATED RECOVERABLE FLOW: 700 AF/Y

FUNDING

State: $453,000
Local Agency: 0
Modesto Irrigation District

- **State Benefit:** DIRECT. Reduce diversion from Tuolumne; water quality improvement in the Tuolumne, Stanislaus, and SJR (TB and QO)

- **Local Benefits:** water supply reliability, flexibility

**SUMMARY**
- existing ditch and pipeline replacement with plastic pipe

**MONITORING:** Pre and post project monitoring

**ANTICIPATED RECOVERABLE FLOW:** 1000 af/y

**FUNDING**
- State: $500,000
- Local: 529,000
Lost Hills Water District
Agricultural ~ Canal lining

- **State Benefit:** INDIRECT-reduce irrecoverable loss, potential for less diversion
- **Local Benefit:** reduce irrecoverable losses, water supply reliability, drainage reduction

**SUMMARY**
- Concrete lining of irrigation canals.
- Benefits of reduction in drainage and maintenance costs.

**MONITORING:** Pre and post project monitoring

**ANTICIPATED WATER SAVINGS**
350 AF/Y and 210 AF/Y drainage reduced from the two projects.

**FUNDING**
- **State:** $245,000 and $559,140
- **Local:** $61,440 and $186,380
City of Sacramento
Park Irrigation Infrastructure Improvements

• State Benefit: DIRECT- reduce recoverable/irrecoverable losses and improve water quality
• Local Benefits: flexibility, water management, costs

• Summary:
  – Repair irrigation systems in 10 parks

• Monitoring:
  – Pre-project water consumption
  – Water meter measurement of post project consumption
• Anticipated savings: 176 AF/Y

• Funding:
  – State: $754,000
  – Local: $135,000
Contra Costa Water District
ULFT and Urinal Replacement

- State Benefit: DIRECT- reduce irrecoverable loss
- Local Benefits: water supply reliability

SUMMARY:
- single-family and multi-family and commercial customers

MONITORING: Baseline data (fixtures/ water consumption), customer satisfaction, actual consumption data

ANTICIPATED WATER SAVINGS: 136 AF/Y year

FUNDING
- State: $647,446
- Local: $647,446
Res. High Efficiency Clothes Washer Rebate

- State Benefits: DIRECT/INDIRECT-reduce irrecoverable and recoverable losses
- Local Benefits: water supply reliability

- Summary;
- MWD
  - $1.6 M
  - $2.0 M
- Electric and Gas Industries Association
  - 25,000 clothes washers
  - State:$1.5 M
  - Local:$2.1 M

- Anticipated benefits: 7,204 gallons per clothes washer/year

- Monitoring
  - Rebate activity
  - Customer satisfaction
  - Rebate/water consumption evaluation
City of Los Angeles
Large Landscape Smart Irrigation Program

- CALFED Benefit: INDIRECT-reduce irrecoverable and recoverable losses
- Local Benefits: water supply reliability
- Summary: Install 150 weather-sensitive controllers on large landscapes

- Anticipated savings: 75 AF/Y and 50% runoff reduction
- Funding:
  - State: $183,500
  - Local: $187,500

- Monitoring
  - Historical consumption
  - Post Inst. consumption
  - Site evaluation
  - Customer satisfaction
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<thead>
<tr>
<th>Category</th>
<th>Concept Proposals</th>
<th>Ineligible Proposals</th>
<th>Invited Back</th>
<th>Available Funding $M</th>
<th>Invited State Share $M</th>
<th>Invited Local Share $M</th>
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<td>Urban Section A (Implementation)</td>
<td>69</td>
<td>4</td>
<td>26</td>
<td>$12.8</td>
<td>$24.8</td>
<td>$40.6</td>
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<td>Urban Section B (R&amp;D)</td>
<td>68</td>
<td>5</td>
<td>32</td>
<td>$2.2</td>
<td>$4.5</td>
<td>$5.7</td>
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<td>1</td>
<td>19</td>
<td>$18.1</td>
<td>$20.8</td>
<td>$16.9</td>
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<td>Agriculture Section B (R&amp;D)</td>
<td>53</td>
<td>1</td>
<td>27</td>
<td>$2.2</td>
<td>$3.8</td>
<td>$0.95</td>
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<td>Total</td>
<td>216</td>
<td>11</td>
<td>104</td>
<td>$35.3</td>
<td>$53.9</td>
<td>$64.1</td>
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Concept Proposals Invited Back by Region

- Region 6V
- Region 7
- Region 8
- Region 9
- Statewide
- Unknown
- Region 4
- Region 5 Sacramento
Concept Proposals Invited Back by Type

Section A - Implementation

Technical Assistance  R&D  Outreach  Feasibility
SHOW ME THE MONEY !! For Water Use Efficiency
Regional Strategies Eligible for Funding

Reduce Water Demand
- Agricultural Water Use Efficiency
- Urban Water Use Efficiency

Improve Operational Efficiency and Transfers
- Conveyance
- System Reoperation
- Water Transfers

Increase Water Supply
- Conjunctive Management and Groundwater Storage
- Desalination –Brackish and Seawater
- Precipitation Enhancement
- Recycled Municipal Water
- Surface Storage – CALFED
- Surface Storage - Regional/Local

Improve Water Quality
- Drinking Water Treatment and Distribution
- Groundwater/Aquifer Remediation
- Matching Quality to Use
- Pollution Prevention
- Urban Runoff Management

Practice Resource Stewardship
- Agricultural Lands Stewardship
- Economic Incentives (Loans, Grants, and Water Pricing)
- Ecosystem Restoration
- Floodplain Management
- Recharge Areas Protection
- Urban Land Use Management
- Water-Dependent Recreation
- Watershed Management
$180 Million for expenditures and grants for urban and agricultural water conservation, recycling, and other water use efficiency projects.
Issues

• Funding: less than expected
  – CALFED Record of Decision that called for an investment of $1.5 billion to $2 billion from 2000-2007.

• Measuring “benefits”
  – Effectiveness study: what are real savings? Where does the water go?
  – Monitoring projects
Issues

• Are we getting what we need?
  – Target grant efforts to “Gaps”
  – Update TB’s
  – Balancing opportunities vs. specific goals
  – Participation
    • Education and Outreach
    • Proactive Project Development

• Project environmental consequences
  – Careful/detailed application review
CALFED WUE Incentive-Based Program

• Investments will be made in the most cost effective WUE measures first.
• Requirements will be made for performance and accountability
• CALFED agency pays towards primarily capitalization, local pays for O&M
• Cost effective projects must be implemented at the local level (AB 3616 and Urban MOU compliance)
• CALFED agency pays towards projects that are not locally cost effective, but are cost effective from statewide perspective
• Cost share must be according to local and statewide benefits
• Agency supports disadvantaged communities actions
Proposition 50 Chapter 7

• Section 79550(g)- $180 Million for expenditures and grants for urban and agricultural water conservation other water use efficiency projects ($120 M) and recycling ($60 M).

• Section 75552. Projects shall be consistent with the CALFED Programmatic ROD.
Water Use Efficiency

Priority Projects: Benefits

1. Water Savings
2. Flow & Timing
3. Water Quality Improvements
4. Energy Savings
5. Other Benefits
Statistics- applications

• Applications accepted: 168
  – Agriculture: 62
  – Urban: 106
• Recommended for funding: 72
  – Agriculture: 27
  – Urban: 45
Prop 50 Grant Fund Requirements were:

- Project must result in Bay-Delta direct or indirect benefit
- Project must be cost effective from Statewide perspective.
- Projects with multiple benefits were encouraged.
- Cost share was based on the balance of the Bay-Delta and local benefits
  - The greater the value of Bay-Delta benefits, the greater State share
Bay-Delta System Direct or Indirect Benefits

• Direct benefits are project outcomes that contribute to a CALFED Water Use Efficiency objective within the Bay-Delta system.
  – contributes toward a stated Quantifiable Objective for in-stream flow and timing.

• Indirect benefits are project outcomes that help to reduce dependency on the Bay-Delta related system or improve a region’s water supply reliability.
  – an agency can delay the need for additional deliveries from the Bay-Delta system.
DWR’s WUE Grant Program

To view previous applications, funded projects, and funding summary visit:

http://www.owue.water.ca.gov/finance/index.cfm