OCWP Implementation
Year 1 Review
OWRB Meeting
June 18, 2013

J. D. Strong
Executive Director
Defining Success: Original Goals of the 2012 OCWP Update

1. Characterize **demands** by water use sector.
2. Identify **reliable supplies** to meet forecasted demands.
3. Perform **technical studies** to evaluate emerging water management issues.
4. Comprehensive **stakeholder engagement** to make recommendations regarding the management of Oklahoma’s water resources.
5. Ensure water resources management programs that **create reliability**.
6. Make **“implementable” recommendations** based upon technical evaluations and stakeholder input.
Most Comprehensive and Vetted Water Plan in State History

Executive Report:
- Synthesis of OCWP technical studies and results
- Water policy recommendations

13 Watershed Planning Region Reports:
- Results of OCWP technical analyses, including options to address identified water shortages
Foundational Tasks in OCWP Development

1. Demand Projections
2. Water Supply and Gaps/Depletions
3. Water Supply Alternatives
4. Public Participation and Policy Development

*Tasks and sub-tasks prioritized by and contingent upon available funding.*
Foundational Tasks in OCWP Development

Demand Projections

- Statewide projections of demand for all major water users through 2060:
  - Municipal and industrial
  - Self-supplied industrial
  - Oil and gas production
  - Thermoelectric power
  - Agricultural
  - Domestic uses
  - Nonconsumptive uses
- Down to provider level

- Stakeholder workgroups
- Conservation Analysis
- Assessment of Climate Change Impacts
Demand Projections
Total Water Demands (2010-2060)
Demand Projections
Growth by Water Use Sector (2010-2060)

- Irrigation = 25%
- Thermoelectric = 31%
- M&I = 28%
- Oil/Gas = 12%
Demand Projections
2060 Total Water Demands By Region
Foundational Tasks in OCWP Development

Water Supply and Gaps/Depletions

- Characterize statewide water supply availability
- Compare supply projections with demand projections
- Quantify anticipated deficits in supply
- Infrastructure constraints

- Stakeholder workgroups
- “Wet” water availability
- Legal/Permit availability (water rights)
- Water Allocation Modeling and OKH2O Tool
- Statewide Surface Water Quality Trend Analysis
Water Supply Gaps/Depletions
Seasonal Deficits

**Surface Water Gaps by Season (2060 Demand)**
West Central Region, Basin 59

<table>
<thead>
<tr>
<th>Months (Season)</th>
<th>Maximum Gap AF</th>
<th>Median Gap AF</th>
<th>Probability Percent</th>
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<tbody>
<tr>
<td>Dec-Feb (Winter)</td>
<td>100</td>
<td>100</td>
<td>29%</td>
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<tr>
<td>Mar-May (Spring)</td>
<td>100</td>
<td>80</td>
<td>14%</td>
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<td>Jun-Aug (Summer)</td>
<td>60</td>
<td>60</td>
<td>47%</td>
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<tr>
<td>Sep-Nov (Fall)</td>
<td>100</td>
<td>60</td>
<td>34%</td>
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1 Amount shown represents largest amount for any one month in season indicated.

**Magnitude and Probability of Annual Gaps and Storage Depletions**
West Central Region, Basin 59

<table>
<thead>
<tr>
<th>Planning Horizon</th>
<th>Maximum Gaps/Storage Depletions</th>
<th>Probability of Gaps/Storage Depletions</th>
<th>Probability Percent</th>
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<tr>
<td></td>
<td>Surface Water</td>
<td>Alluvial Groundwater</td>
<td>Bedrock Groundwater</td>
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<tr>
<td>2020</td>
<td>110</td>
<td>280</td>
<td>0</td>
</tr>
<tr>
<td>2030</td>
<td>280</td>
<td>490</td>
<td>0</td>
</tr>
<tr>
<td>2040</td>
<td>470</td>
<td>710</td>
<td>0</td>
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<tr>
<td>2050</td>
<td>660</td>
<td>990</td>
<td>20</td>
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<tr>
<td>2060</td>
<td>920</td>
<td>1,340</td>
<td>290</td>
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</table>
Water Supply Gaps/Depletions

Hot Spots: Areas where most severe water problems are projected
Water Supply Gaps/Depletions

Infrastructure

- Drinking Water Infrastructure Assessment (CDM/First Southwest)
- Infrastructure Community Impact Assessment
- Public Water Supply System Survey (OML/ORWA)
- Infrastructure Mapping Pilot Project
Foundational Tasks in OCWP Development

Water Supply Options/Alternatives

• Analysis of Primary Options:
  – Demand Management
  – Out-of-Basin Supplies
  – Reservoir Use
  – Increasing Reliance on SW or GW

• Conservation Analysis

• Aquifer Recharge Study and Workgroup

• Marginal Quality Water Study and Workgroup

• Reservoir Viability Study
Foundational Tasks in OCWP Development
Public/Stakeholder Participation and Policy Development:

- CDM and OWRRI facilitated and participated in hundreds of stakeholder and citizen meetings to fine-tune study results as well as develop solutions to Oklahoma’s most pressing water issues.

- Local and Regional Input Meetings
- Water Law/Science Seminars
- Stakeholder Meetings
- Planning Workshops
- Legislative Workgroups
- Tribal Water Issues/Liaison
- Academy Town Hall
- Feedback/Implementation Meetings
OCWP Priority Recommendations

- Water Project & Infrastructure Funding
- Regional Planning Groups
- Excess & Surplus Water
- Instream & Environmental Flows
- State/Tribal Water Consultation & Resolution
- Water Conservation, Recycling & Reuse
- Water Supply Reliability
- Water Quality & Quantity Monitoring
Water Infrastructure Funding:

• Address Oklahoma’s projected $82+ billion water and wastewater infrastructure need by 2060.

• OWRB’s 5 successful grant & loan programs can only satisfy 4-9% of this need

• Specifically address the needs of small- to medium-sized communities.
Drinking Water Project & Infrastructure Funding

Drinking Water Project Need vs. Capacity

Billions

- Total Need
- Available Funding Capacity

Present to 2020 | 2021 - 2040 | 2041 - 2060 | Total Period
Conservation, Recycling & Reuse:

- Identify innovative solutions to forecasted water shortages:
  - Voluntary programs/policies, financial incentives, and education.

Water for 2060 Act sets statewide goal of consuming no more fresh water in 2060 than we consume today.

Advisory Council (supported through Corps PAS funding) will make recommendations:
- Members named
- Meetings pending
Conservation, Recycling & Reuse
Water for 2060 Advisory Council

Members:

- J.D. Strong, Chairman
- Jim Bachmann (Tulsa)
- Lauren Brookey (Tulsa)
- Tom Buchanan (Altus)
- Bob Drake (Davis)
- Danny Galloway (Stillwater)
- Roger Griffin (Broken Bow)
- Charlette Hearne (Broken Bow)
- Mark Helm (OKC)
- Nathan Kuhnert (OKC)
- Phil Richardson (Minco)
- Kevin Smith (Enid)
- Trent Smith (Choctaw)
- Joe Taron (Shawnee)
- Jerry Wiebe (Hooker)

www.owrb.ok.gov/2060
## OCWP Conservation Analysis: Water Savings

### M&I and Agriculture Statewide Demand Projections & Water Savings for Conservation Scenarios (AFY)

<table>
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<tr>
<th></th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>2060</th>
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<td>Baseline</td>
<td>1,377,318</td>
<td>1,455,309</td>
<td>1,523,273</td>
<td>1,587,406</td>
<td>1,642,069</td>
<td>1,711,392</td>
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<td>Scenario I</td>
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<td>1,332,781</td>
<td>1,388,603</td>
<td>1,435,807</td>
<td>1,496,643</td>
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<td>Scenario II</td>
<td>N/A</td>
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<td>1,170,248</td>
<td>1,209,372</td>
<td>1,244,123</td>
<td>1,295,569</td>
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</table>
Water Quality & Quantity Monitoring:

- Better data for improved decision-making.
- Restore funding for statewide water quality and quantity monitoring program.
- Create the first comprehensive groundwater monitoring program.

$1.5 Million appropriation to create a permanent statewide GW/SW monitoring network.
Water Quality/Quantity Monitoring

Stream Monitoring

- 103 sites (BUMP sites and USGS gages, including Coop Network and new OCWP gages at the terminus of all 82 planning basins)
- More frequent site visits; more parameters sampled
Water Quality/Quantity Monitoring
Lake Monitoring

- ~130 lakes sampled statewide (BUMP sites)
- More frequent site visits
- More parameters sampled
Water Quality/Quantity Monitoring
Groundwater Monitoring & Assessment Program

- As many as 2,000 wells will eventually comprise the statewide network with coverage of every major aquifer in the state
- Both quality and quality parameters
- First of four phases underway in 2013
Water Supply Reliability:

- Ensure water availability for future growth through **fair and sustainable water allocation**:
  - aquifer yield studies
  - stream water allocation models
  - Further analysis of groundwater-surface water interactions, seasonal permitting, and conservation-oriented permitting approaches

**Utilization of $1.3 million/year in Gross Production Tax proceeds for OCWP implementation (including studies) extended through 2016.**
Water Supply Reliability
Stream Water Allocation Models

- 9 stream systems completed; 42 stream systems unstudied
- Prioritize systems reaching full allocation
- Prioritize OCWP “Hot Spot” Basins
- Complete allocation models by 2017

Modeled Basins
Water Supply Reliability
Major Groundwater Basin Studies

- 10 major basins unstudied; 9 major basins overdue
- Complete all unstudied and overdue GW basins by 2022
Instream/Environmental Flows:

- Recognize nonconsumptive water needs and supporting recreational and local economic interests.
- Assess the suitability and structure of a potential instream flow program for Oklahoma.

Instream Flow Advisory Group reconvened in March 2013:

- Two meetings to date
Instream/Environmental Flows:
ISF Advisory Workgroup

Members:
- Jim Reese (ODAFF)
- Mark Derichswieler (ODEQ)
- Barry Bolton (ODWC)
- Tom Creider (OK Dept. of Tourism)
- Arnella Karges (State Chamber)
- Brooks Tramell (OK Cons. Comm.)
- Tyler Powell (OSE)
- Marsha Slaughter (OKC)
- Kevin Stubbs (USF&WS)
- Shannon Brewer (USGS)
- Jeff Tompkins (Reclamation)
- Tom Elkins (Cherokee Nation)
- Marla Peek (Farm Bureau)
- James Gammill (ORWA)
- Diane Pedicord (OML)
- Brian Woodard (OIPA)
- Scott Dewald (Cattlemen's Assoc.)
- Jim Barnett (EFO)
- Mike Mathis (Chesapeake)
- Mike Fuhr (Nature Conservancy)
- Angie Burckhalter (Devon)
- Bud Ground (PSO)
- Charlette Hearne (ORWP)
- Sierra Club David Ocamb
Regional Planning Groups:

- Most popular recommendation
- Create **non-regulatory** Regional Planning Groups to assist in planning and implementing OCWP initiatives at the regional level.
- Consist of local stakeholders representing unique interests of each region.
- No formal progress to date.
Regional Planning Groups
New Board Member Regions

Senate Bill 965:
- transitions nine-member OWRB Board from Congressional District and at-large representation to regional scheme
- loosely mirrors 1995 OCWP planning regions (plus Panhandle)
- takes initial effect in 2014
Excess & Surplus Water:

- Protect local water needs while addressing statewide demands.
- Definition and procedure required by statute.
- Ensure that the area of origin (planning basins) will never be made water deficient.
State/Tribal Consultation & Resolution:

- Build cooperation to **avoid future conflict** and remove uncertainties to water use.
- Governor, State Legislature & Tribes should **make formal consultation a high priority**.
OCWP Supporting Recommendations & Initiatives

- Nonpoint Source Pollution
- Maximizing & Developing Reservoir Storage
- Water Management & Administration
- Dam Safety & Floodplain Management
- Water Quality Management
- Navigation
- Interstate Water Issues
- Source Water Protection
- Water Emergency & Drought Planning
- Water Supply Augmentation
- Water-Related Research
- Agricultural Water Research
- Climate & Weather Impacts on Water Management
OCWP Supporting Recommendations

Nonpoint Source Pollution
• Promote BMPs and related conservation practices through cost-sharing/incentives

Maximizing & Developing Reservoir Storage
• Maximize existing reservoir benefits and investigate additional construction opportunities

Water Management & Administration
• Provide flexibility and strengthen water use permitting process
• Improve protection of GW supplies
OCWP Supporting Recommendations

Dam Safety & Floodplain Management
– Support and expand local floodplain management efforts through cooperative partnerships, mapping, education and funding.
– Establish a source of funding for high-hazard dam reclassification, dam breach inundation mapping, emergency planning and outreach.
– Address liability issues of dam owners.

Water Quality Management
– Increased collaboration and stable funding for point and nonpoint source pollution control programs.
OCWP Supporting Recommendations

• **Navigation**
  – OWRB and ODOT Waterways Advisory Board should work cooperatively and proactively to address navigation-related issues.

• **Interstate Water Issues**
  – Explore the creation of standing compact committees to limit potential interstate conflicts and litigation.

• **Source Water Protection**
  – State technical assistance to public water supply systems to develop source water and wellhead protection plans.
Water Emergency/Drought Planning

– Update the Oklahoma Drought Management Plan to specifically address all water emergencies and expand related training opportunities for system operators.

– Bureau of Reclamation drought planning tool
– Emergency Drought Relief Fund (HB 1923)
– OCWP Public Water Supply Planning Guide

Water Supply Augmentation

– Evaluate the effectiveness of invasive plant species management, increased water filtration and runoff reduction in augmenting water supplies.
OCWP Supporting Recommendations

Water-Related Research
– State support for continued development and advancement of research programs to assist water users/managers in addressing Oklahoma’s most pressing water issues.

Agricultural Water Research
– Local, state, federal and tribal agencies should collaborate with agricultural officials to support associated water research, education and extension activities.

Climate & Weather Impacts on Water Management
– State should advance understanding of climate and weather and associated impacts on Oklahoma’s citizens and water user community.
2012 OCWP Update

Funding

OCWP Funding (FY 2007→):

• State Appropriations

• Leverage state appropriations with federal funds through federal authorities:
  – Federal:
    • Corps of Engineers
    • Bureau of Reclamation
    • USGS
  – State:
    • OK Water Resources Research Institute
    • State Gross Production Tax
2012 OCWP Update
Funding
Planning
Partners
2012 OCWP Update

Funding

State Audit:

- OWRB requested an official audit of the OCWP by the State Auditor/Inspector
- Demonstrated fiscal responsibility:
  - OCWP expenditures were substantially less than that previously attributed to process
# 2012 OCWP Update

## Funding

<table>
<thead>
<tr>
<th>Expenditure Category</th>
<th>Expenditure Detail</th>
<th>Expenditure Amount</th>
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<td><strong>State</strong></td>
<td>Contractual</td>
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<td>Salary &amp; Fringe</td>
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<td>Travel</td>
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<td>Supplies</td>
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<td></td>
<td>Equipment</td>
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<td>Other</td>
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<td>Adjustment I</td>
<td>$421,015</td>
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<td>Adjustment II</td>
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<td><strong>Subtotal, State</strong></td>
<td><strong>$9,605,465</strong></td>
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<td><strong>Federal</strong></td>
<td></td>
<td><strong>$3,768,399</strong></td>
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<tr>
<td><strong>Other</strong></td>
<td></td>
<td><strong>$2,932</strong></td>
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<tr>
<td><strong>Total Expenditures</strong></td>
<td></td>
<td><strong>$13,376,796</strong></td>
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## Contract Expenditure Detail

<table>
<thead>
<tr>
<th>Contractor Category</th>
<th>Direct Payments from OWRB to Vendor</th>
<th>Total Amount Matched by Contractor</th>
<th>Amounts Contractors Incurred Above Contract Amount</th>
<th>Total Cost of Work</th>
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<tr>
<td><strong>State</strong></td>
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<td>OK Dept of Environmental Quality</td>
<td>$126,874</td>
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<td>OK Dept of Agriculture</td>
<td>-</td>
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<td>University of Oklahoma</td>
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<td>$1,620,858</td>
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<td><strong>Federal</strong></td>
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<td>Bureau of Reclamation</td>
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<td>Corps of Engineers</td>
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<td>Terri Sparks (contractor)</td>
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2012 OCWP Update
Funding: Going Forward

• Increased appropriations in FY-13 to implement OCWP priorities have been left intact for FY-14
OCWP Success
Water for ALL Oklahomans
through 2060 & beyond

– The Plan is for all Oklahomans so all Oklahomans must take ownership.
– Constructive solutions; build upon the Plan.
– Increased unity among water user groups.
– More partnerships between federal, state, local and tribal governments.
– Willingness to make tough choices.