Strategic Planning Session

IS THE SACRAMENTO VALLEY PREPARED FOR THE NEXT DROUGHT?

JANUARY 30, 2013
LUNDBERG FAMILY FARMS
Schedule for Today

- Overview of drought
- Local agency perspectives
- Agency/Company authority
- Discussion
- How do we prepare for next drought?
Goals for Today

- Bring additional awareness and focus to drought assessment and planning
- Facilitate water resources managers and Board members thinking on how they can better be prepared for drought
- How can NCWA assist in preparing for the next drought
What is a Drought?

- A prolonged period of dryness
- A prolonged or chronic shortage or lack of water
The Sacramento Valley: Allocating Water in Times of Shortage

- Surface Storage Indexes
- Direct Diversion Limitations
  - Inflow Triggers
  - Water Right Conditions
    - Priorities
    - Term 91
- Groundwater Limitations
Motivating Factors & Pressures – External to Region

Rededication of CVP & SWP Supplies Since 1992

- ESA - Salmon
- CVPIA "B(2)"
- CVPIA Refuge "L2"
- CWA - WQCP
- CVPIA - Trinity
- ESA - Delta Smelt
- ESA - Salmon, etc.
- San Joaquin River
Increased Delta Outflow – 1.1 maf (50%) or 480 taf (40%)

Reduce Carryover Storage
- 2.2 maf (50%)
- 1.0 maf (40%)

Increase Groundwater Extractions
- 250 taf → 1.0 maf (50%)
- 100 taf (40%)

Debilitates California’s Ability to Prepare for and Serve Water During Drought
BDCP Flows

- “Proportional Watershed Flow” (Scenario 7a)

- Protecting Upstream Water Users: State and U.S. governments will make sure implementation of BDCP will not result in adverse effects on the water rights of those in the watershed of the Delta, nor will it impose any obligations on water users upstream of the Delta to supplement flows in and through the Delta. (Governor Statement July 25, 2012)
1976-77 Drought

- Very short, but focused drought
- Reduced flows throughout the Valley
- No deliveries in certain districts
- CVP Water Service Contracts – 25%
- CVP Water Right Settlement Contracts – 75%
- SWP Exchange Contracts – 50%
1988-1992 Drought

- CVP Water Service Contracts – 25% (91/93)
- CVP Water Right Settlement Contracts – 75% (91/92/94)
- SWP Exchange Contracts – 50% (91/92)
- Significantly reduced deliveries in certain districts
1988-1992 Drought

- 23 counties declared drought emergencies
- Governor creates drought water bank
- ESA scrutiny (i.e., GCID, ACID)
- SWRCB D-1630 (never adopted)
- Water quality scrutiny
2007-2009 Drought

- CVP Water Service Contracts – 40% (08,09)
- In June 2008 the Governor issued an executive order proclaiming a condition of statewide drought and a state of emergency in nine Central Valley counties
- In February 2009 the Governor proclaimed a state of emergency for nine Central Valley counties and in June 2009 the Governor issued an executive order proclaiming a condition of statewide drought
- DWR creates 2009 Drought Water Bank
Significant lack of precipitation early in the year led to serious discussions about shortage allocations.

March relief with late winter and spring snows.
Federal/State Responses to Drought

- 1998- National Drought Policy Act
- 2000- Governor’s Critical Water Shortage Contingency Plan
- 2003- USGAO report on meeting the challenges of expected shortages
- 2007- California State Board of Food and Agriculture
Federal/State Responses to Drought

- 2008-2009 – Governor issues Executive Orders and Emergency Proclamations

- 2009 – Water Bond contains $455,000 for drought relief

- 2010 – California Drought Contingency Plan

- 2012 – DWR Climate Change Handbook

- 2013 – President Acknowledges country’s drought in inaugural address
U.S. Drought Monitor

January 22, 2013
Valid 8 a.m. EST

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

Released Thursday, January 24, 2013
Current California Conditions
(Snow Survey)

- 93% of average water content
- Lake Oroville – 75% (113% average)
- Shasta Lake – 76% (111% average)
- SWP – 40% to Contractors South of Delta
What is Changing?

- Urban growth
- More permanent plantings
- Fall water for rice decomposition
- Irrigation technology
- Flow Requirements
- Others…..
Panelists

- Cache Creek etc.
  - Tim O’Halloran - Yolo CFCWCD

- Sacramento River
  - Thad Bettner - Glenn Colusa Irrigation District
  - Lewis Bair - RD 108
  - Jeff Sutton - Tehama Colusa Canal Authority
  - Dan Ruiz - Westside Water District

- Feather River
  - Ted Trimble - Western Canal

- Yuba River
  - Curt Aikens - Yuba County Water Agency

- Agency/Company Authority
  - Kevin O’Brien - Downey Brand
Questions for Panelists

- What happens to your surface water rights during dry and critically dry years?
- How does your agency/area make up for the reduction in surface supplies?
- What efforts have you taken to manage groundwater supplies in your area?
- How did landowners in your area (both within and outside your jurisdiction) respond during the last several droughts?
- What are the new demands on your water supplies since the last drought (i.e., urbanization, new cropping patterns)?
- What measures have you taken to address these new demands and to meet the various water needs in the next drought?
What efforts should Northern California and NCWA undertake to help meet water supply needs in the next prolonged drought?
Ensuring Reliability: Planning for Drought - Planning for Change!

NCWA Strategic Planning Session
Lundberg Family Farms, Richvale

January 30, 2013

Tim O’Halloran
www.ycfcwcd.org
Change Happens!!!

This way

Other way

That way
<table>
<thead>
<tr>
<th>Change Happens!!!</th>
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<tbody>
<tr>
<td>• Regulatory</td>
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<tr>
<td>• Economic</td>
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<tr>
<td>• Technology</td>
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<tr>
<td>• Societal</td>
</tr>
<tr>
<td>• Land Use</td>
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<td>• Climate</td>
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</table>
The Basic Equation:

Supply = Demand
Integrated Regional Water Management Plan

-checked Water Supply & Drought Preparedness
-checked Water Quality
-checked Storm Drainage and Flood Control
-checked Aquatic Ecosystem Enhancement
-checked Recreation
IRWMP Foundational Actions

- Groundwater Monitoring
- Surface Water Monitoring
- Subsidence Monitoring
- Groundwater Modeling
- WEAP Climate Change Model
- Environmental and Aquatic Habitat
- Topographic Mapping (LiDAR)
- Water Resource Information Database
- SCADA Network Enhancement
Yolo County Groundwater Monitoring Program
Water Rate Schedule as a Foundational Action
Overall Goals of New Variable Rate Schedule

- Prop 218 compliance
- Rate stabilization with hydrologic uncertainty
- Infrastructure and operational sustainability
- Recognize and encourage conjunctive use
# 2012 YCFCWCD Agricultural Water Allocation and Rates Worksheet

<table>
<thead>
<tr>
<th>CASE</th>
<th>Total Storage (acre-feet)</th>
<th>Remainder left in Storage (acre-feet)</th>
<th>Forecast Delivery Losses</th>
<th>Projected Water Sales (acre-feet)</th>
<th>Water Allocation (af/acre)</th>
<th>Rate $</th>
<th>Projected Revenue (millions)</th>
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<tr>
<td>1</td>
<td>40,000 to 90,000</td>
<td>20,000 to 20,000</td>
<td>45%</td>
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<td>0.16 to 0.55</td>
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<td>3</td>
<td>140,001 to 190,000</td>
<td>20,000 to 20,000</td>
<td>35%</td>
<td>78,001 to 110,500</td>
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<td>190,001 to 250,000</td>
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**BUDGET SCENARIOS**

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<tr>
<td>- Hydroelectric</td>
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<td>$0.45</td>
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<td>- Property Tax</td>
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<td>$0.88</td>
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<tr>
<td>- Water Availability</td>
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<td>- Reserves used</td>
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<tr>
<td>- Water Sales (ag)</td>
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<tr>
<td>- Water Sales (non-ag)</td>
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<tr>
<td>- Hydroelectric</td>
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<td>$0.45</td>
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<td>- Property Tax</td>
<td>$0.88</td>
<td>$0.88</td>
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<td>- Water Availability</td>
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<td>- Reserves used</td>
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<td>Balance</td>
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</tr>
<tr>
<td>Remaining Reserves</td>
<td>$2.62</td>
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INFORMATION MANAGEMENT DISCUSSION WITH SACRAMENTO VALLEY WATER MANAGERS

✓ We are “Resource Managers”
✓ Establish “Credibility”
✓ “Understand” the data
Thank You

Contact Information:
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tohalloran@ycfcwcd.org
(530) 662-0265
Drought Assessment & Planning

Glenn-Colusa Irrigation District

Thaddeus L. Bettner
January 31, 2013
2012 Inflow to Shasta
Historical Comparison of Sacramento Natural Inflow

Note: Cumulative end of month Full Natural Inflow for years since 1977 in which October through December cumulative FNF is equal to or less than cumulative inflow in 1977 for the same period. Data obtained from the California Date Exchanges Center (CDEC) for years.
2012 Drought Action Plan

• Developed New Allocation Policy
• Developed Methods to Deal with Shortages
• Implemented Conservation Measures
• Calculated Rate Impacts
Available Water Supply

• Settlement Contracts require a 25% reduction in base and Project water supplies, if Shasta annual inflow is less than 3.2 million acre-feet

• GCID Settlement Contract of 825,000 acre-feet will be reduced to 618,750 acre-feet

• GCID contract water usage in 2012 was 696,000 acre-feet

• SHORTAGES WILL EXIST
## Allocation by Irrigable Acre

<table>
<thead>
<tr>
<th>Acre-Feet</th>
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<tbody>
<tr>
<td><strong>Gross Water Supply Available:</strong></td>
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<tr>
<td>Contract Base Supply</td>
</tr>
<tr>
<td>Less 25% Deficiency</td>
</tr>
<tr>
<td>Maximum Base Supply Diversion</td>
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<tr>
<td>Contract Project Water</td>
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<tr>
<td>Less 25% Deficiency</td>
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<tr>
<td>Maximum Project Water Supply</td>
</tr>
<tr>
<td><strong>Total Contract Water Available:</strong></td>
</tr>
<tr>
<td>Subtract Drain Outflow</td>
</tr>
<tr>
<td>Add Recycled/Reused</td>
</tr>
<tr>
<td>Subtract 17% System Loss</td>
</tr>
<tr>
<td><strong>Total Amount of Water Available:</strong></td>
</tr>
<tr>
<td>Divided by Irrigable Acreage</td>
</tr>
<tr>
<td><strong>Final Water Allocation per Irrigable Acre:</strong></td>
</tr>
</tbody>
</table>
2012 Allocation Process

1. First Allocation - acre-foot per irrigable acre basis.

2. Water not used in the First Allocation - applied to Second Allocation to crops still needing supply.

3. Landowners still short were required to identify additional supply or fallowing.

4. Applications compared to recent years to demonstrate consistent water use patterns.

5. IT RAINED, INFLOW UP – PROGRAM TERMINATED
GLENN-COLUSA IRRIGATION DISTRICT
COMPARISON OF CROP EVAPOTRANSPIRATION VS. APPLIED WATER DEMAND

4 AF/AC allocation
Options to Meet Shortages Remaining After Secondary Allocation

- Reduce planted acres on original application
- Allocation from another GCID grower (internal transfer)
- Pump groundwater
- Purchase District pumped groundwater (quantity and price to be determined by the Board)
- Purchase groundwater from another GCID well owner (this option will require wheeling services by the District)
Critical Year Conservation Measures

• **General water management:**
  – Water must be effectively managed to prevent waste of water
  – Water orders must be placed by 1 pm the day prior to delivery
  – No non-crop water available until after October 31

• **Rice field management:**
  – Flooding depth limited to 6 inches at field high point
  – Spilling allowed through notched weir board until July 1
  – NO SPILL – July 1 through end of irrigation season

• **Rice field drainage:**
  – 2 re-floods allowed prior to July 1
  – Terminate field delivery 7 days prior to draining field
  – Provide 24-hours notice prior to draining field
  – PCA verifiable recommendation required for drainage due to crop stress
Drain Outflow Monitoring

- Outflow sites measure flow from major drainage watershed areas
- Provides accurate data needed for water balance calculations
- Allows for monitoring conservation field spillage
Critical Year Financial Impact

Rescheduled Water Costs $49,500
Increased Energy Cost $61,000
Lost Revenue from Fallowing $744,302
Lost Revenue from the In-Basin Transfer Program and Others $66,000

Impact on the 2011-2012 Budget: $920,802

GCID Drought Contingency Reserve will be used to cover the financial impact of the critical year
Drought Scenario – Future Goals

• Revise Allocation Process
• Set Critical Year Rates and Budget
• Better Define Critical Year Supply Alternatives
• Allow for Water Transfers
  1. Internally
  2. In Basin/Regionally
  3. Out of Valley
Revise Critical Year Allocation Process

• GCID Rules & Regs #6 - Allocation

• Question

  – Keep allocations based on **irrigable** acre basis and crop unit duties (water code 22252.3), OR
  
  – Change allocation process to assessed acreage (water code 22250)

(154,000 assessed vs. 131,000 irrigated acres)
Set Critical Year Rates & Budget

• Historic Rate Setting
  – Assessments, Standby charges and Crop Duty per acre

• Critical Year
  – Allocate and Charge by Assessed Acres
  – Charge by AF

(154,000 assessed vs. 131,000 irrigated acres)
Better Define Critical Year Supply Alternatives

• Internal Allocation Transfers
• Landowner Groundwater Wells
• District Groundwater Wells
• Landowner - Landowner Groundwater Transfer (requires wheeling services by the District)
Transfers

• Internal Transfers
• Surplus Water – WC 22259
  – Need to Satisfy all internal demands first
• Transfers Out
  – Landowner common lands in other Districts
  – Colusa Basin Drain Mutual Water Company
  – SRSC Districts
  – TCCA Districts
  – Refuges
  – Out of Valley
Questions?
NCWA Drought Workshop

Reclamation District No. 108
Discussion Topics

• Background, setting and resources

• Managing Drainage Water

• Groundwater Development

• Water Transfers
RD 108

• Background
  – Formed in 1870
  – Senior Water Rights
  – Settlement contract
    • 25% maximum cut
  – Unique physical setting
    • Leveed basin
    • 400 miles of drains
    • Pretty flat
Estimated Cumulative Full Natural Inflow to Shasta Lake Water Year 2013

Updated through January 27

- 50% Exceedance Estimate after 1/27/2013
- 90% Exceedance Estimate after 1/27/2013
- Cumulative Full Natural Inflow for Water Year

Cumulative Full Natural Inflow for Water Year 2013 through January 27 is approximately 1.8 MAF

Note: Cumulative Full Natural Inflow is based on mean daily data obtained from the California Data Exchange Center (CDEC). Exceedance Estimates are based 1922-2012 monthly unimpaired inflow to Shasta.
Drainage Program

Significant Investment and Program Change in Last 5-years

• Expansion of 1970’s reuse facilities ($1M)

• Tailwater incentive program ½ cfs/100 ac.

Ongoing water quality monitoring 25 locations
Groundwater Program

- 14 dedicated multi-completion monitoring wells (still expanding)
- 5 production wells (3 last year)

Cautious Development

- AB303 Investigation
- Adjacent Subsidence
Water Transfers

• Transfer Policy
  • Prioritizes In Basin and Ag to Ag Transfers

• Functional In-Basin Project Water Transfer Program
  – Possible in 100% years, but very limited in 75% years

• Very Few Out of Basin Transfers
  – Idling/crop shifting has little viability with Delta conveyance limitations and favorable crop prices
  – Very little groundwater capacity and comfort
Questions?
Tehama-Colusa Canal Authority
Drought Planning and Assessment

Jeffrey P. Sutton
General Manager
Tehama-Colusa Canal Authority
P. O. Box 1025
Willows, CA 95988
(530) 934-2125
Tehama-Colusa Canal Authority

- Operate & Maintain Sacramento Canals Unit of the Central Valley Project
  - Tehama Colusa Canal (110 miles)
  - Corning Canal (22 miles)
  - Funks Reservoir
  - Red Bluff Diversion Facilities

- Serves 17 Water Districts with CVP water service contracts throughout a four county service area (Tehama, Glenn, Colusa, and Yolo County)

- Total TCCA District Contract amounts = 318,700 acre feet

- Irrigation to 150,000 acres
  - almonds
  - pistachios
  - walnuts
  - prunes
  - olives
  - rice
  - tomatoes
Crop Type in the TCCA Service Area

- **Permanent**
  - 1992: 70,000
  - 1997: 80,000
  - 2002: 90,000
  - 2007: 70,000

- **Annually**
  - 1992: 30,000
  - 1997: 40,000
  - 2002: 20,000
  - 2007: 10,000

- **Fallowe/Idle**
  - 1992: 0
  - 1997: 0
  - 2002: 0
  - 2007: 0
Impacts to CVP Water Supply Reliability

- Central Valley Project Improvement Act (800,000 af, refuge water)
- Trinity Record of Decision
- SWRCB Bay Delta Water Quality Plans
- Central Valley Project OCAP Biological Opinions by NMFS and USFWS (2006 and 2009)
### Historical CVP Agricultural Water Allocations

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<th>YEAR</th>
<th>NOD</th>
<th>SOD</th>
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<td>1977</td>
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<tr>
<td>77-89</td>
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<td>1990</td>
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<td>40*</td>
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</tr>
<tr>
<td>9</td>
<td>40**</td>
<td>10</td>
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<tr>
<td>10</td>
<td>100***</td>
<td>45</td>
</tr>
<tr>
<td>11</td>
<td>100</td>
<td>80</td>
</tr>
<tr>
<td>12</td>
<td>100****</td>
<td>40</td>
</tr>
</tbody>
</table>

* = Decrease of 5% on 6-3-2008
** = Started at 5%; Increase to 40% on 5-22-2009
*** = Started at 0%; Increase to 50% on 3-16-2010; Increase to 100% on 4-15-2010
**** = Started at 30% on 2-22-2012; Increase to 100% on 4-13-2012

C= CRITICAL
D=DRY
W=WET
AN=ABOVE NORMAL
BN= BELOW NORMAL
TCCA Water Shortage Tools

- 3f water (Sacramento River surplus flows, Black Butte)
- In-district grower transfers (move water to permanent crops)
- In-basin Project Water transfers (5-year accelerated water transfer document). CVPIA Section 3405(a)(1)(M)
- Groundwater- Warren Act Contracts (5-year TC wide Warren Act Contract; limited availability and water quality concerns)
- Shasta critical years- idling/groundwater substitution transfers
Water Transfer Challenges/Impacts

- Timing (2009 experience)
- Environmental/Administrative requirements, federal, state, and local (NEPA, CEQA, DWR, USBR, USFWS)
- Third Party impact issues
- Increased costs of water
- Increased per acre foot TCCA conveyance charge
- Reduced Project power generation; increased power costs to Project users
Additional Threats to Water Supply Reliability

- Delta Stewardship Council - Delta Plan
- SWRCB Bay Delta Water Quality Plan Update
- Bay Delta Conservation Plan
- Endangered Species Act (USFWS & NMFS BO RPAs)
- Other ???
Opportunities to Reduce Drought Impacts

- Improved communications with USBR regarding water allocation announcements
- Streamlining of the environmental/ regulatory/ administrative process for water transfers (federal, state, and local agreements)
- Integrated Regional Water Management Planning
- New surface storage – Sites Reservoir
- Area of Origin
- Sacramento Valley Preservation Act
Questions?

Jeffrey P. Sutton
General Manager
Tehama-Colusa Canal Authority
P. O. Box 1025
Willows, CA 95988
(530) 934-2125
Westside Water District

Dan Ruiz, General Manager
5005 State Highway 20
Williams, CA
Westside Water District
Drought Response Plan
14,896 Acres - 65,000AF Contract

<table>
<thead>
<tr>
<th>Year</th>
<th>Permanent crops</th>
<th>Total water use</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>5,765 acres</td>
<td>35,000 AF</td>
</tr>
<tr>
<td>2012</td>
<td>10,442 acres</td>
<td>29,500 AF</td>
</tr>
</tbody>
</table>
Drought Tools

TCCA Reduced Allocation:

• 3F Water
• Warren Act Water
• In-Basin Transfers (SRSC & TCCA)
• Crop Consolidation (Protect High Value Crops)
• Dry Year Supplements
Drought Tools

Shasta Critical:
• Crop Idle/Groundwater Substitution Transfers
• Common Landowner Transfers
• Hope and Pray
Policy

• Survey Landowners needs and pain level
• Board Approval
• Working with USBR to receive timely notifications of allocations
Fiscal Impacts and Tools Available

• Price Effect of Reduced Water
  – Under collect TCCA Assessment, Retro-Restoration Charge and District O&M Charge

• Appropriate Reserves Established
  – Drought Reserve
  – TCCA Assessment Reserve
<table>
<thead>
<tr>
<th>Description</th>
<th>30% Allocation</th>
<th>15,750 AF</th>
<th>28,000 AF</th>
<th>100% Allocation</th>
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<tbody>
<tr>
<td>USBR Rate</td>
<td>$31.93</td>
<td>$31.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retroactive Restoration Fund Charge (Fiscal Years 2008-2010)</td>
<td>4.62</td>
<td>2.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISTRICT O&amp;M COMPONENT</td>
<td>1.10</td>
<td>1.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TCCA CONVEYANCE ASSESSMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Westside's T-C Assessment Rate</td>
<td>$396,682</td>
<td>25.19</td>
<td>14.17</td>
<td></td>
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<tr>
<td>CCWD Transfer Fee</td>
<td></td>
<td>Not Applicable</td>
<td>(1.44)</td>
<td></td>
</tr>
<tr>
<td>TRINITY PUD ASSESSMENT</td>
<td>0.05</td>
<td>0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESTORATION FUND FEE</td>
<td>$9.39</td>
<td>9.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER CHARGE PER ACRE-FOOT</td>
<td>$72.28</td>
<td>$57.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Projected Revenue</td>
<td>$1,138,300</td>
<td>$1,618,400</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Landowner Behavior

• Seeking additional relationships with neighboring Districts
• Very apprehensive to buy expensive water, 2009 example
• Landowner’s increasing flexibility of groundwater supplements (500 gpm)
Questions?
Western Canal Water District

NCWA DROUGHT PLANNING SESSION
LUNDBERG FAMILY FARMS, RICHVALE
JANUARY 30, 2013
TED TRIMBLE, GENERAL MANAGER
Water Supply

Diversion Agreement with Department of Water Resources

**WCWD**

295,000 AF March – October
- 150,000 AF Natural Flow (subject to reduction)
- 145,000 AF Stored Water (not subject to reduction)

**Joint Water Board (BWD, BWGWD, RID, SEWD)**

- 555,000 AF March – October (subject to reduction)
- 50,000 AF Sunset Pumping Plant (SEWD)

**WCWD and Joint Water Board**

- Winter Water November – February “unquantified” period subject to beneficial use
Contract Reduction Provisions

WCWD and Joint Water Board

Subject to up to 50% reduction of ‘Natural Flow’ in any one year or 100% reduction in any series of seven consecutive years

Example:

• 1991 and 1992 “Natural Flow Supply’ was reduced 50%

• No reduction was allowed in following five years

• 1998 would have been the next allowable reduction year
Deficiencies

Two provisions:

1) Forecasted April – July unimpaired runoff to Lake Oroville for the current water year is equal to or less than 600,000 AF (avg 1.75 MAF)

2) Total accumulated actual deficiencies of unimpaired runoff to Lake Oroville below 2.5 MAF in the immediately prior water year or series of consecutive prior water years each of which had runoff of less than 2.5 MAF, together with the predicted deficiency below 2.5 MAF for the current year, exceed 400,000 AF
Deficiencies

Example:

1989 – 3.687 MAF unimpaired runoff
1990 – 2.171 MAF unimpaired runoff (deficit 329 KAF)
1991 – 2.056 MAF unimpaired runoff (deficit 443 KAF)
1992 – 1.897 MAF unimpaired runoff (deficit 602 KAF)
1993 – 5.713 MAF unimpaired runoff
1994 – 1.891 MAF unimpaired runoff (deficit 608 KAF)
1995 – 9.279 MAF unimpaired runoff
Approach to Deficiencies

WCWD

During deficiencies the district allocates water on a pro-rated basis i.e. 3 AF per irrigable acre

Landowner

Groundwater

• Plentiful groundwater availability – full basin
• No District owned groundwater wells
• Approximately 140 landowner owned deep wells

Idling

Tailwater Recovery Pumps
Changes Since Last Drought

Increase in planted acreage 20% "Right to Farm"
Increase in commodity prices
Increase in dedicated wetland habitat

Increased diversions
Rice straw decomposition
Waterfowl habitat
Re-flood events due to herbicide application restrictions
Water Transfers

Water transfers are a difficult option during drought

Groundwater Substitution

Butte County Ordinance-Chapter 33 (1996)
Lengthy and expensive process
Unpopular locally and politically charged
Untested

Glenn County Ordinance No. 1237 (2012)
Less complicated but only 30% of District
Untested
Water Transfers

Crop Idling
Limited water supply during drought
Unmet local demand (prorated distribution)
In basin transfers possible

Institutional Barriers
Highly regulated by Department of Water Resources
Unreasonable restrictions
Time consuming due to bureaucratic red tape
Environmental compliance
Tools for Dealing with Drought

Agricultural Water Management Plan – SBx7-7

Groundwater Management Plan – AB3030/SB1938

WCWD Water Shortage Allocation Policy

Local, Regional and Statewide Cooperation and Communication
   Water Advisory and Technical Committees

PRAY FOR RAIN!!
Western Canal Water District

Website & Webcam:

www.westerncanal.com

Email:

Ted@westerncanal.com
Are We Prepared for the Next Drought?
NCWA Strategic Planning Session
January 30, 2013
Lundberg Family Farms, Richvale
Yuba County Water Agency

• Created in 1959 by State Legislature as a stand-alone government entity
• Driving forces for creation included flood management and water supply
• YCWA Board of Directors
  – 5 County Supervisor members
  – 2 At large members
  – Effectively address county-wide water resource issues
• Territory includes all of Yuba County
• Coincident political and hydrologic boundaries
Yuba River Watershed

- Yuba Watershed
  - 1340 square miles
- Highest yielding Sacramento Valley watershed
  - Yuba River – 1,957 AF/sq mile
  - American River – 1392 AF/sq mile
  - Feather River – 1,253/sq mile
- Yuba unimpaired flow
  - Low 370 TAF
  - Average 2,400 TAF
  - High 4,400 TAF
- Instream flows set by reservoir storage and year type
YCWYA Storage and Diversion
YCWA Storage and Diversion

Corp of Engineers - Daguerre Point Dam
YCWA Water Supply and Use

YCWA Member Units
## Surface Water Deliveries

<table>
<thead>
<tr>
<th>YCWA Member Unit</th>
<th>Acre Feet</th>
</tr>
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<tbody>
<tr>
<td>Brophy WD</td>
<td>77,706</td>
</tr>
<tr>
<td>Brown Valley ID</td>
<td>18,476</td>
</tr>
<tr>
<td>Cordua ID</td>
<td>61,765</td>
</tr>
<tr>
<td>Dry Creek MWC</td>
<td>11,592</td>
</tr>
<tr>
<td>Hallwood ID</td>
<td>59,046</td>
</tr>
<tr>
<td>Ramirez WD</td>
<td>22,167</td>
</tr>
<tr>
<td>South Yuba WD</td>
<td>39,097</td>
</tr>
<tr>
<td>Wheatland WD</td>
<td>13,937</td>
</tr>
<tr>
<td><strong>Total Water Deliveries</strong></td>
<td><strong>303,787</strong></td>
</tr>
</tbody>
</table>

2011
## YCWA Water Supply and Use

### Crops Receiving Surface Water

<table>
<thead>
<tr>
<th>Crop Category</th>
<th>Acreage</th>
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<tbody>
<tr>
<td>Citrus and subtropical</td>
<td>300</td>
</tr>
<tr>
<td>Deciduous fruit and nuts</td>
<td>10,300</td>
</tr>
<tr>
<td>Field crops</td>
<td>600</td>
</tr>
<tr>
<td>Grain and hay</td>
<td>1,300</td>
</tr>
<tr>
<td>Pasture</td>
<td>9,500</td>
</tr>
<tr>
<td>Rice</td>
<td>37,500</td>
</tr>
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</table>

DWR, 2005
As of 2010, all eight of our member units are served by surface water from the Yuba River.

Agricultural areas outside of the member units still dependent on groundwater.

Municipal and industrial supply provided by groundwater.
YCWA Water Supply and Use

• YCWA Project Water Benefits
  – Alleviated groundwater overdraft in the South Yuba subbasin

  – Improved water reliability for both surface water and groundwater users

  – Provided ability to conjunctively manage surface and groundwater supplies for local and statewide use through water transfers
• Changes since last droughts
  – Agricultural demand for surface water has increased significantly
    • Ramirez Water District - 1978
    • South Yuba and Brophy Water WDs – 1983
    • Dry Creek MWC – 1998
    • Wheatland WD – 2010
  – Instream flow requirements have increased demands on surface water
  – Urban growth has increased groundwater demand
YCWA Water Management Actions

• Lower Yuba River Accord
  – Created to protect and improve local water reliability

– Achieving coequal goals
  • Reliable water supply - during dry years supplemented by groundwater pumping
  • Yuba River health – more water available for instream flows

– Several elements are specifically meant to help achieve reliable supplies during drought
  • Integrated water management
  • Active conjunctive use
  • Collaborative mechanisms to achieve multiple objectives
YCWA Water Management Actions

• Integrated Water Management
  – Groundwater fully integrated into the water supply, not just a fall back during very dry periods
  – Surface water flow schedules designed by biologists
  – Surface water shortages determined by knowing what we could provide in supplemental supply from groundwater – GW storage, pumping capacity
  – A learning process, but transition helped water reliability
Active Conjunctive Use
- Makes groundwater a working supply
- When drought and surface water shortages occur, the “system” is up and running
- Provides funding to maintain a ready GW supply
  - Monitoring
  - Infrastructure maintenance – wells, pumps
  - Third party outreach
  - Technical support
- Makes transition to groundwater use routine, resulting in
  - Reduced fear of drought impacts
  - Improved understanding of basin, better planning
  - Broad support from landowners – installed, maintained wells
• Collaborative mechanisms to achieve multiple objectives
  – From the realization that nothing will come from just holding on to what you have; water will just get regulated away
  – Instead, shift the discussion from win/lose to one that meets multiple objectives
  – Key is to work together to find solutions
YCWA Water Management Actions

- Collaborative Process: Conference Year
  - Worst case scenario flow schedule
  
  - Low probability of occurrence (1%), but must be planned for due to severe impacts on supply
  
  - Regulatory constraints are relaxed in exchange for defined limits on surface supply (250 TAF), which can be made up with GW pumping
  
  - Reduces need to operate under inflexible curtailment plans that might unnecessarily impact supplies in less severe drought years
Efforts to Better Prepare

- Policies and procedures for water allocations
  - YCWA Member Unit supply contracts contain curtailment clauses based on:
    - Water rights
    - Base and supplemental supply quantities
    - Contact date priorities
  - Complicated and difficult to apply
  - Goal is to develop policies and procedures to smooth implementation of any necessary water supply allocations and curtailments
  - “A work in progress”
Efforts to Better Prepare

- **Groundwater Monitoring**
  - Annual monitoring and measurement reports
  - CASGEM monitoring entity
  - Constructed 6 new dedicated monitoring wells during 2012
Efforts to Better Prepare

• Groundwater Management Plan Update
  – Reflects major research work
    *Hydrogeologic Understanding*
  – Information new water management activities
    • Wheatland Canal
    • New monitoring wells
    • Accord implementation
    • Groundwater adaptive management tool
    • FERC relicensing
  – Refined basin management objectives
  – Added three new BMOs
    • Stakeholder communication
    • Local control of GW basin
    • Improving basin understanding
Efforts to Better Prepare

- Agricultural Water Management Plan
  - Water balance
  - EWMP evaluation
  - Water measurement compliance documentation
  - YCWA Measurement Improvement Plan
Efforts to Better Prepare

- **IRWMP Update**
  - Legislatively required updates
  - Build regional capacity to field competitive projects
  - Begin aggressive recruitment process
  - Design and implement appropriate governance system
  - Create practical nexus between planning and water management
Efforts to Better Prepare

- Yuba County General Plan Update
  - Active engagement with county land use planners
  - Provided and interpreted water planning and management documents
  - Review and comment on natural resource element documents of the General Plan
Water Service Issues During Drought

January 30, 2012

Joe Schofield
District Authority to Allocate Water Shortages

General rule for irrigation districts: “All water distributed for irrigation purposes shall ... be apportioned ratably to each landowner [in proportion to] the last assessment against his land ... for district purposes.”

- Water Code § 22250

Apparently does not apply if no assessment.
District Authority to Allocate Water Shortages

- In upholding similar rule by the Railroad Commission, the Cal. Supreme Court held:

  “It would be most unjust and very injurious . . . to hold that in times of shortage the older consumers could have a full supply and the later none. [Such] a rule would mean, as to later consumers, not only that their crops for the year would be lost, but that their orchards or plantings would be destroyed, when by prorating the water the orchards and plantings of all would be preserved with some impairment of crops for the time, but no serious permanent injury.”

  - *Butte County Water Users*, 185 Cal. 218 (1921)
District Authority to Allocate Water Shortages

When irrigation districts charge for water, “the use of water shall be distributed equitably as determined by the board among those offering to make the required payment.”

- Water Code § 22252
District Authority to Allocate Water Shortages

Despite requirement to distribute in proportion to assessment, irrigation districts have following authority to affect apportionment:

- By unanimous vote of all board members, fix date prior to which applications for water for ensuing season must be received (rules for changing date apply)
- May require cash deposit for each acre applied for (up to full water charge)
- If shortage materializes, district may give preference to or only serve lands for which apps were received
  - Water Code § 22252.1
District Authority to Allocate Water Shortages

Despite requirement to distribute in proportion to assessment, irrigation districts have following authority to affect apportionment:

- Board may fix annual water requirements for specific crop types
- May refuse to provide water to anyone exceeding these requirements, or may fix penalties

- Water Code § 22252.3
District Authority to Allocate Water Shortages

Water Districts must apportion irrigation water ratably in proportion to last assessment. Water Code § 35420

However, water districts may also:

• Require applications for water, fix app deadline and require deposit § 35450-35452

• In case of water shortage, give preference to or serve only the land for which applications were timely filed; if water still short, proportionate reductions. § 35453-54

• If water inadequate for all application land, proportionate cuts may be made (if water charges make up more than half of district revenue)

• If no meters, may establish crop duty limits
District Authority to Allocate Water Shortages

Reclamation District boards have the general authority to adopt rules for the distribution of water

- Water Code § 50911
District Authority to Allocate Water Shortages

When districts have flexibility under governing statutes, allocations may differentiate between different user groups only if based upon a reasonable classification.

Water Companies

“Stockholders in corporations organized chiefly to acquire and distribute water have a right to the proportionate distribution of such water at the time the stock is acquired and may individually enforce that right.”

Water Companies

In cases of shortage, “the duty of the water company is to supply such water as it has, fairly apportioned between its consumers.”

Water Companies

The water company’s articles and bylaws are of critical importance in justifying distribution during shortage. A significant body of law holds these documents constitute a contract between the corporation's shareholders and the corporation.
Recent case concerned challenge to mutual water company’s shortage allocation, which was in proportion to the number of shares owned in the company after a threshold domestic water share. Though farmers with more irrigable acres got a lower percentage of water, the allocation was upheld because it was neutral in that it applied to all shareholders.

– De Boni Corp. v. Del Norte Water Co.
Water Shortage Emergency

The board of any public or private supplier that provides water for human consumption, sanitation or fire purposes has authority to declare shortage emergency. Water Code § 350-359.

• Basis for an emergency declaration:
  - Ordinary water requirements cannot be satisfied without depleting the distributor’s water supply to the extent there would be insufficient water for human consumption, sanitation, and fire protection.
Water Shortage Emergency

- Once declaration of emergency is adopted, after a hearing the board may adopt such regulations and restrictions on the delivery of water and the consumption within said area of water supplied for public use as will in the board’s sound discretion conserve the water supply for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection.
Water Shortage Emergency

The emergency regulations:

• may also establish priorities in use of water for other purposes (e.g., irrigation) and provide for the allocation, distribution, and delivery of water for such other purposes, without discrimination between consumers using water for the same purpose or purposes; and

• these regulations supersede any law establishing rights of individual customers to receive either specific or proportionate amounts of water.

Water Code §§ 354, 357
Moratoriums on New Connections

• Moratoriums on new connections during drought are generally upheld even in absence of an immediate water shortage emergency

• Providers need not wait until its supplies are actually depleted before taking strong steps to conserve
Moratoriums: A Taking?

Potential water use has not been recognized as a compensable property right by California courts.

Water Transfers for Surplus Water

“If its board deems it to be for the best interests of the district, a district may enter into a contract for the lease or sale of any surplus water or use of surplus water not then necessary for use within the district, for use either within or without the district.”

• Water Code § 22259 (irrigation districts)
Water Transfers for Surplus Water

“If its board deems it to be for the best interests of the district, a district may enter into a contract for the lease, sale, or use of any surplus water not then necessary for use within the district, for use either within or without the district.”

- Water Code § 35425 (water districts)
A district may transfer such of its property as the board determines is no longer necessary for district operations.

- Water Code § 50931 (reclamation districts)
Protections for Transferers

- Water Code § 1016(b). After the term of a water transfer agreement, the transferee or beneficiary shall not: Claim any right to a continued supply of water as a result of the transfer, based on water shortage emergency or unforeseen or unforeseeable increases in demand or any other cause.