

MEETING SUMMARY

**CALIFORNIA WATER PLAN UPDATE 2009
AGRICULTURAL WATER USE EFFICIENCY STRATEGY WORKSHOP
9:00 A.M. – 2:00 P.M.
CENTER FOR COLLABORATIVE POLICY
815 S STREET, SACRAMENTO, CA**

Meeting Purpose and Goals:

1. Increase clarity in discussing Agricultural Water Use Efficiency (WUE) among stakeholders
2. Update and improve the Agricultural WUE RMS (Volume 2, Update 2009)
3. Revise and refine Agricultural WUE Related Actions (for the Update 2009 Objectives)

Welcome and Introductions

Kamyar Guivetchi, Chief of the Division of Planning and Local Assistance, CA Department of Water Resources (DWR), and Lisa Beutler, executive meeting facilitator from the Center for Collaborative Policy (CCP), welcomed everyone to the meeting. Lisa went over the agenda and ground rules for the meeting.

Meeting materials are available on the Water Plan Meeting Materials website, here:
<http://www.waterplan.water.ca.gov/materials/index.cfm?subject=oct0208>

Defining of Agricultural Water Use Efficiency Strategy

Kamyar Guivetchi explained that one of the main reasons for this workshop was to increase clarity in discussing Agricultural Water Use (WUE) efficiency among stakeholders. Different stakeholders were using the term Agricultural WUE in different ways. To help to come to a common understanding, the group reviewed a 1-page document called “**Agricultural Water Use Efficiency Strategy.**” This handout attempts to define and explain the term and concept of Agricultural Water Use Efficiency as used in the draft Water Plan Update 2009. The text was based on content from the September 30, 2008 Pre-Administrative Draft of the Agricultural Water Use Efficiency resource management strategy narrative. The California Water Plan considers **net water**, not applied water, when defining and measuring Agricultural WUE.

Comments from Group Discussion:

- What may be new water on the farm may not be new water for the basin.
- Too many things are mixed here under the concept of Ag WUE. Simplify the definition; seems like the direction we are moving toward is less drop per crop.

- The definition in the handout does not say how to measure Agricultural WUE.
- Whenever water is applied, it should be done on a scientific basis, as a controlled process.
- Energy efficiency should be a separate issue/strategy from Agricultural WUE.
- Agricultural WUE is a tool, separate from the policies that are the product of the tool. Separate the tool (strategy) from the outcomes.
- It was asked whether to add the word “engineering” to the definition.
- Less drop per crop or decreased net irrecoverable flows.

There was an extended discussion about whether to use of the word “control” or “manage” in the working definition. As discussed, “control” of water would mean operational control rather than political control; i.e. control of measurement structures and mechanisms and techniques to apply water to fields with precision.

The group also discussed the concepts of “conservation” vs. “efficiency” as intended purposes of an Agricultural WUE strategy. In this sense, “conservation” means a net reduction in water use. Efficiency means to do more with the same (less drop per crop).

The group came up with a tentative working definition of Agricultural WUE:

The Water Plan Agricultural Water Use Efficiency Strategy describes use of scientific processes to control agricultural water delivery and application to achieve beneficial outcomes.

This working definition separates the Agricultural WUE strategy from any specific intended outcomes of Agricultural WUE (such as water supply, water quality, environmental benefits, energy savings, and improved crop quality/yield). The separation of the definition from the outcomes is important as benefits are specific to the situation in which the strategy is applied. There was still disagreement on the use of the term “control” vs. “management”. It was agreed that DWR would accept and consider further comments on the definition after the workshop.

Mapping Trends Affecting Agricultural Water Use Efficiency to 2050

The workshop participants next discussed trends in Agricultural WUE to the year 2050. Trends are things that people think will happen in the external world between now and 2050 that will impact decisions on when and how to use Agricultural Water Use Efficiency. The purpose of this exercise was to create a common social, economic, and technological context for dialogue and decision-making with regards to Agricultural WUE. The group was asked the question,

What are the trends driving Ag WUE, between now and 2050, that must be addressed to create successful policy and recommendations in the California Water Plan?

The facilitators created a Mind Map that reflected comments made during the group discussion. The Mind Map appears in Appendix A on page 10. Additional comments on trends that were submitted in writing by online workshop participants during the meeting are shown in Appendix B on page 11.

After the Mind Map was completed, the full group was asked to place colored stickers to indicate the Mind Map trends that they felt would benefit from increased attention or that held personal importance. The purpose of this exercise was to help the group identify its key concerns in real-time. Each individual was given 8 stickers. Participants self-selected their sticker colors placed their stickers as individuals. The 7 colors corresponded to different categories of broad stakeholder interests:

- Agriculture/Agribusiness
- Academic
- Business/Industry
- Environmental/Recreation
- Government
- Urban Planning/Land Use
- Water Purveyors

When the group reviewed the dot placement on the Mind Map, it was observed that there was a surprisingly broad and scattered-distribution of colors across the different trends of the mind map. It was commented that agricultural stakeholders tended to cluster their stickers on trends that were external to the agricultural sector more than internal drivers that agricultural sector could influence. An agricultural stakeholder commented that he would put all votes on the “lack of public investment” out of concern that positive changes will not happen without additional funding.

Workshop participants were then divided into 6 small groups to have focused discussions on specific topic areas:

Topic Assignments by Group:

- Group 1: Land use changes
- Group 2: Economics
- Group 3: Change in Government Policies
- Group 4: Environmental Stressors
- Group 5: Agronomics
- Group 6: Water Supply Development and Availability

GROUP REPORTS:

Group 1: Focus on Land Use Trends

What are the current responses to trends?

- Increasing water reuse
- Increasing soil salinity
- Taking land out of production (idling)
- AB 375: Smart growth to protect prime farmland
- Increasing agricultural land conservation easements
- Crop choices changing from low-cash to high-cash value crops

What are the preferred responses to these trends?

- Much more effective to grow crops on good soil
- Take away farm subsidies – dictate what can be grown when public funds are provided
- Keep floodplains in ag instead of urban development
- Local analysis / users pay
- Move urban to less productive land
- Find solutions to conflicts between conservancies and existing farmers (do not decrease the economic base)

Group 2: Focus on Economics Trends

- International markets will drive trends to more high value crops that will require more and better reliable water supplies
 - o Food security is a related concern in with water energy and air quality
- Reliable public funding will continue to be an essential ingredient for improving WUE in response to external pressures
- Water-related regulatory requirements will increase costs of water deliveries.
- Increased farm-level input costs will impact profitability.

Group 3: Focus on Changes in Government Policy

What are the current responses to these trends?

- State has appropriated considerable funding to WUE through various propositions.
- Recent trends have been to look at storage and conveyance funding over WUE funding.
- Not all of the funding identified for WUE has been utilized some has been left on the table.
- Grant processes are very bureaucratic, too many restrictions, take a long time, and are a disincentive for small districts. Cost share is not large enough in some cases to make the process worthwhile.
- Regulations have driven up the cost of doing business for farmers and water districts. Federal Energy Regulatory Commission (FERC) relicensing and Endangered Species Act (ESA) are driving up costs
- Current mood with increasing competition for limited water resources is to increase regulations.
- Water right permits are being opened up.
- Public does not have a good understanding of agricultural water use.

What are the preferred responses to these trends?

- Need better quantification of public benefit to continue to justify public funds.
- Need to expedite grant processes.
- Farmers need help spreading the cost of complying with additional regulations. Some should be passed on to the consumers.
- Regulations and court decisions need to be science based.
- Need to engage stakeholder processes instead of top down regulations.
- Avoid public trust cases. Outcome is highly unpredictable given the various interpretations of public trust.
- Consider incentivized regulations that give entities credit for complying. Reward those who are complying

Group 4: Focus on Environmental Stressors

What are the current responses to these trends?

- Crises develop and are responded to, rather than a top-down approach (for example, Delta Smelt population and Judge Wagner's 2008 decision to curtail water exports)
- Growers are preparing for potential future stressors and try to come up with their own solutions before they are dictated to them.
- Environmental stressors are physical manifestation of externalized costs.
 - o As costs become internalized, the response is that everyone tries to move those costs to someone else.

What are the preferred responses to these trends?

- Avert problems before they become crises
- Form partnerships
- Develop knowledge and transfer knowledge
- Negotiate responsibly and make those responsibilities clear to all parties
- Generate certainty so people can anticipate operational constraints and considerations
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Group 5: Focus on Agronomics

What are the current responses to these trends?

- Demand for water use hardens as water use efficiency increases.
 - o The response so far has been water transfers from agriculture to urban and to increase groundwater pumping and overdraft
- Yield and setting are changing. There are new crop varieties as well as genetic manipulation of crops that yield new possibilities.
- Growers are shifting crops in response to market drivers
- Pressurized irrigation systems will become more prevalent as a result of a variety of factors, including the market.
 - o This will contribute to increased energy use as well as increased use of other resources.

What are the preferred responses to these trends?

- To respond to demand hardening, have increased water supply storage and groundwater banking capacity
- In some cases, watershed management and watershed administration will help keep more snow as storage
- In response to crop shifting, prefer to have policies that foster crop diversity.
 - o Market-driven crop shifting often limits diversity.
- In response to energy issues, laws should be revised to promote equitable resale of individual farming operations rather than zero sum gain.

Group 6: Supply Development

1. What are the current responses to this trend?

- Increased groundwater banking
- Increased conjunctive use programs
- Interagency water transfer agriculture to agriculture
- Transfers within an agency
- Increased variability in supply
- Improved distribution of water supply (water transfers, canal lining)
- Use of recycled water on agricultural lands
- Increased groundwater overdraft (with or without recharge)
- Less impoundment
- Increased opposition to infrastructure

2. What are the preferred responses to this trend?

- Increase municipal use of recycled water
- Increase research and education to increase use of recycled water on more diverse agricultural crops
- Increase infrastructure: levee improvement; reservoir construction; groundwater banking
- Increase cooperation for transfers and banking
- Assure legal protection for interagency transfers
- “Umbrella” water broker to coordinate transfers, banking
- Improve cooperation and communication with stakeholders to avoid litigation
- Continue to preserve water rights

Discussion on Scientific Peer Review

Because of the experts in water management community often use different definitions and methodologies with regards Agricultural WUE, DWR felt that a peer review process would have

particular value for the Agricultural WUE strategy narrative in the Water Plan. The group was asked to comment on 2 one-page handouts:

- **“Principles for Development and Use of Analytical tools and Data”**
- **“Potential Questions for Consideration of Peer Review of Agricultural Water Use Efficiency Studies”**

Comments from Group Discussion:

- **In general, the group said that the documents were useful but did not have the correct titles. The label of “peer review” was felt to be misleading for the handouts as written.**
- It was commented that the “Potential Questions for Consideration of Peer Review” resembled an initial investigation to establish an initial premise of a research rather than a peer review of a completed work.
 - o On the other hand, a different commenter felt that the questions seemed appropriate to ask of a peer reviewer.
- The State Water Resources Control Board has a formal peer review process with templates that may be suitable for this purpose
- It was commented that the “Principles” document reads like a RFP (Request for Proposal”
- Transparency is a classic university criteria that anyone in the field would be expected to follow;
- Transparency is critical; stakeholder comments/concerns should be recorded and addressed with a mechanism for reporting what happened.
- Suggestion to have separate lists:
 - o Studies that need to be done
 - o Discrete engineering orientation
 - o What to look for when reviewing larger studies.
- Confidence intervals should be established in a peer reviewed report on Agricultural WUE. The peer review committee would judge the validity of the confidence interval rather than specific numbers.

Questions Raised Regarding Peer Review

- Are region-specific conditions and constraints described and incorporated?
- Is the economic decision-making of growers and water districts appropriately incorporated in the analysis?
- Does the study use the best available data on
 - o crop acres (current and projected?), crop water use,
 - o irrigation systems in use and their costs and performance, and
 - o delivery system conditions and operations?
- Does the study adequately consider delivery system and on-farm application interactions?

Closing, Next Steps

Due to time constraints, there two items that the group were not able to review in detail during the workshop:

- Pre-Admin Draft of the Agricultural WUE Resource Management Strategy
- Agricultural WUE-related Objectives in Water Plan Update 2009, Volume 1

Because the group did not have time in workshop to review these items, it was agreed that the group would review them after the workshop and have opportunity to send in written comments. Kamyar Guivetchi, DWR encouraged workshop participants to submit their written comments to cwpcom@water.ca.gov by Monday, October 13, 2008. David Sumi, CCP, would send an e-mail to all workshop participants with follow-up materials and a reminder to send in comments.

Kamyar said it may make sense for DWR to hold another public workshop after it receives comments and prepares the next draft of the Agricultural WUE Resource Management Strategy narrative and the Water Plan Objectives.

Kamyar thanked everyone for their participation in the meeting.

Attendance: (55 total)

In Room: (38)

1. Manucher Alemi, DWR
2. Steve Archers, TCC
3. Brett Baker, Lt. Governor's Office
4. Monica Barricarte, RWQCB-Region 3
5. Katie Benouar, BTH/Caltrans
6. Lisa Beutler, Center for Collaborative Policy (CCP)
7. Peter Brostrom, DWR
8. Charles Burt, Cal Poly San Luis Obispo
9. Tito Cervantes, DWR
10. Juliet Christian-Smith, Pacific Institute
11. James Cornelius, Sutter County RCO
12. Paul Dabbs, DWR
13. Baryohay Davidoff, DWR
14. Anisa Divine, IID
15. David Edwards, ARB
16. Kevin Eslinger, ARB
17. Justin Fredrickson, CFBF
18. Lloyd Fryer, Kern County Water Agency
19. Kamyar Guivetchi, DWR
20. Bruce Gwynne, Conservation
21. Tom Hawkins, DWR
22. Kathy Mannion, RCRC
23. Danny Merkley, CA Farm Bureau
24. Darrin Polhemus, SWRCB
25. Mark Rentz, DWR
26. Mark Roberson, CALFED Bay Delta
27. Kim Rosmaier, DWR
28. Blake Sanden, UC Coop Extension
29. Greg Smith, DWR
30. Richard Snyder, UC Davis
31. David Sumi, CCP
32. Lori Swanson, San Diego County Water Authority
33. Judie Talbot, CCP

- 34. Dave Todd, DWR
- 35. Al Vargas, CDFA
- 36. Lorraine White, CEC

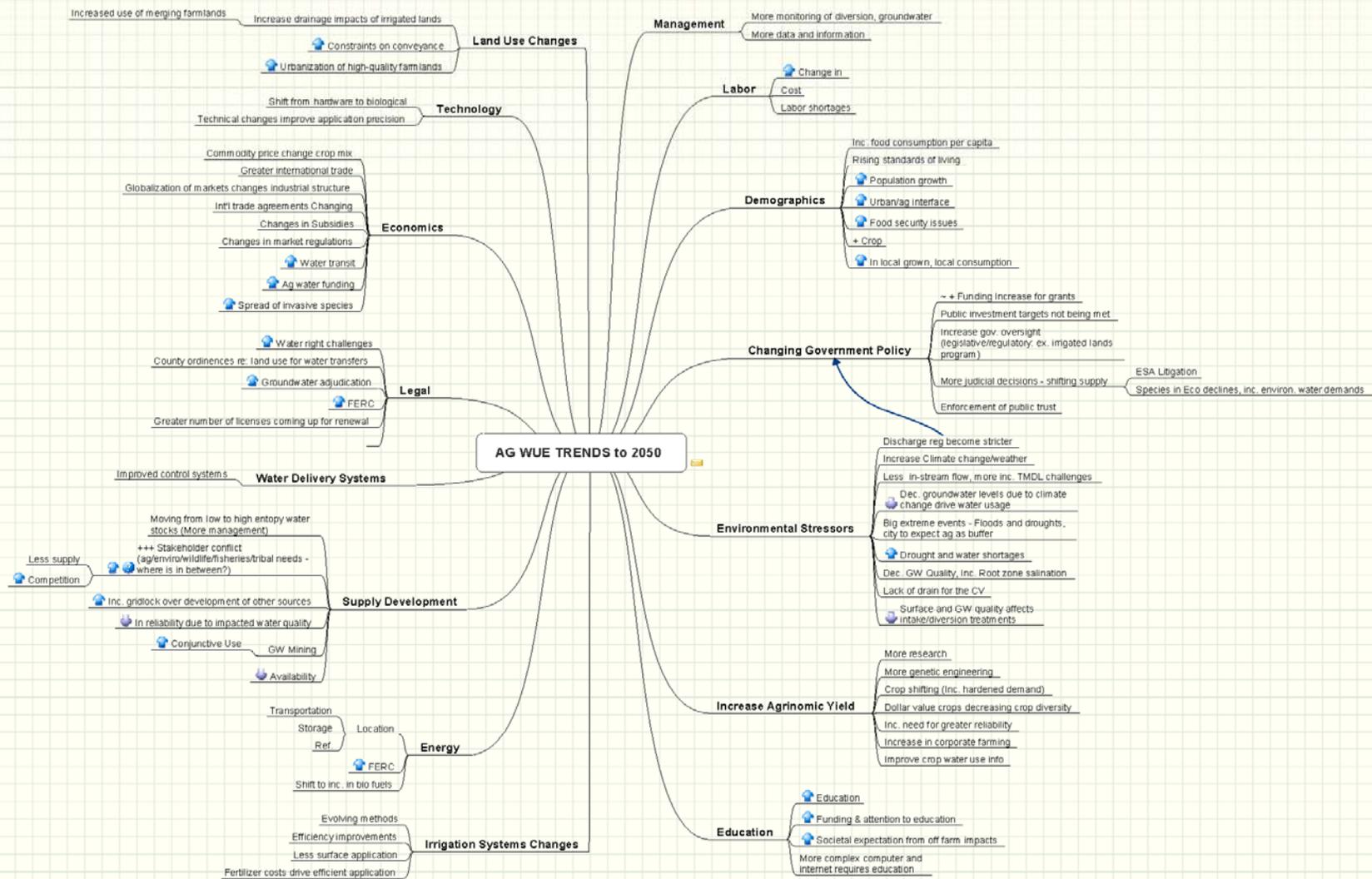
- 37. Jean Woods, DWR
- 38. Greg Young, Tully & Young
Incorporation

Online: (17)

- 1. Thad Bettner, Glenn Colusa ID
- 2. Mark Cowin, DWR
- 3. Mike Day, Provost & Pritchard
Consulting Group
- 4. Erin Field, Irrigation Association
- 5. James Herota, DWR
- 6. Vern Knoop, DWR
- 7. Fadi Kamand, Metropolitan Water
District of Southern CA
- 8. Jennifer Kofoed, DWR
- 9. Ken Modrall, CABY

- 10. Ed Morris, DWR
- 11. Valerie Nera, California Chamber of
Commerce
- 12. Thien Nguyen, DWR
- 13. Kristina Ortez, NRDC
- 14. Robert Reeb, Reedb Government
Relations, LLC
- 15. Dave Scruggs, DWR
- 16. Robert Siegfried, DWR
- 17. Andrew Smith, Irrigation Association

Appendix A: Mind Map: Agricultural Water Use Efficiency Trends to 2050



Appendix B: Additional Trends Submitted by Online Participants (not on Mind Map)

- 1) Greater on farm sufficiency – primarily driven by rising energy costs; this includes greater use of fuels either grown or produced on site (ethanol, methane digesters), increased use of energy produced from solar panels for various purposes, greater incorporation of conservation tillage which reduces fuel and other input costs during crop production. As individuals obviously have been considering ways to save energy at home, this trend is beginning to manifest itself on the farm.
- 2) Increased focus of meeting local demand of foodstuffs with locally grown agriculture, new operations are emerging that are focusing just of the local market; this type of operation avoids energy costs and other costs incurred during transportation and marketing costs of traditional marketing arrangements, benefits the local economy and the consumer receives fresher produce.
- 3) Increased focus on alternative ways to produce. This trend seemed to start with tomatoes but has spread to other commodities, this being the greenhouse or indoor growing industry. This method includes the traditional greenhouse as well as a more far reaching methods currently being tested. One experimental design includes a 9-10 story high rise greenhouse which grows food as each level with the hope of locating these near population centers. The benefit of greenhouses are many, most water, fertilizer, and chemicals are captured and recycled on site, the controlled environment extends the growing season for any location, crop water demand is reduced since crop evapotranspiration is condensed on the greenhouse enclosure and most of it is reused instead of lost to the atmosphere, and yields and crop quality usually exceeds those of the same crop grown in open fields. The main problem as with anything new is available capital to get large operations started and convincing an industry it is an alternative.
- 4) Increase protection of greenbelts and soils of strategic or statewide importance.
- 5) Here in the San Joaquin Valley, unlike greater Los Angeles and other metropolitan areas, cities, irrigation districts and counties have traditionally been pretty independent in their decision making and management. A trend here is greater cooperation among cities, counties and irrigation districts, in watersheds and regionally leading to more efficient use of resources and greater resource stewardship, better planning, etc.