California Water Plan Update 2009
All Regions Forum, June 2-3, 2008
Meeting Summary

Note that all meeting presentations and materials can be downloaded at
http://www.waterplan.water.ca.gov/materials/index.cfm?subject=jun0208

DAY ONE -- JUNE 2, 2008

Table of Contents

1) Welcome

Lisa Beutler, Executive Facilitator for the California Water Plan Update 2009 (CWP), welcomed participants to the meeting and walked them through the day's agenda. Lisa also explained the standard meeting groundrules, and guidance for working in groups.

Kamyar Guivetchi, Department of Water Resources (DWR) Program Manager for the CWP, also welcomed participants. He emphasized how the All Regions Forum built upon the recently completed series of 11 regional workshops. Kamyar also noted that the handout packet included a brochure on the California FloodSAFE program, which has just released a draft strategic plan. FloodSAFE is relevant because the CWP will include integrated flood management in Update 2009.

2) Integrated Regional Water Management

Joe Yun, DWR, then gave a presentation on the details of the Department's Integrated Regional Water Management Program (IRWM). The presentation covered a series of topics including:

- funding allocation
- planning standards and guidance
- the regional acceptance process (with the process and criteria currently in draft)
- integration of flood management
- implementation and implementing legislation
- disadvantaged communities assistance, and
- the program schedule and next steps

Questions and Comments

1) A participant noted that while a new emphasis on integrated flood management has emerged, the CWP already began looking at floodplain management for its Update 2005.
2) A participant noted that the planning regions used by different State processes overlap, or are nested, or have gaps. Resolution of these differences may take considerable time, and it was recommended that (1) DWR keeps a good record of the meetings; (2) DWR has

collective rather than serial meetings; (3) DWR provides meeting facilitation; and (4) some mechanism be established that limits the ability of entities with major facilities in an area to veto a plan that involves many other participants (i.e., no "pocket-vetos").

3) Clarification was requested on the public review process. Joe explained that the program is seeking advice as to whether a proposed IRWM is missing major pieces and should not be accepted, or whether it has greater merit than initial analysis indicated.
4) A participant recommended that the IRWM program quickly develop a clear outline with dates and the timing of products, given that many areas want to move ahead with planning but are holding back to see what processes and criteria emerge. Joe noted that guidelines will likely be available around the end of summer (September).
5) Joe noted that there was a provision that said individual activities should not receive money from multiple parts of Proposition 1E funds.
6) A participant asked how this activity fits with the California Department of Public Health's Stakeholder Committee, which reviews related grant applications. Joe explained that the two groups coordinate and do not duplicate reviews, given that DPH focuses primarily on drinking water systems. **Lisa Beutler noted that the CWP staff would also follow-up on this question about state agency coordination. A summary of Proposition 84 money and programs has also been posted on the above webpage.**
7) A participant noted that in some cases developing a basin plan for TMDLs could make a project ineligible for funding, and requested clarification. Joe replied that the current presentation did not go to that level of detail.
8) A participant commented that disadvantaged communities (DACs) may not be able to begin planning in advance of receiving grant money, and recommended that DWR provide credit for 100% of the funds that are spent for this purpose in advance of grant reception. The participant also recommended that DACs receive "bonus points" in the grant application process, because these are some of the areas with the least water supply reliability.
9) A participant recommended that in cases where DACs overlap with Native American communities, DWR should work with Indian Health Services and the Bureau of Indian Affairs. These two federal agencies have a good understanding of the housing and conditions of drinking water facilities on Tribal lands.

3) Integrated Water Resources Information System

A DVD presentation of DWR's new Integrated Water Resources Information System (IWRIS) was then played. More information can be found at http://www.water.ca.gov/iwris/

It was explained that the software is currently only useable with Windows Internet Explorer 6 software, and there were no plans at this time to make it available for other platforms.

4) Governor's Initiative to Reduce Urban Water Use 20% Statewide by 2020

Rick Breitenbach, CALFED, opened the next session and explained that multiple agencies are involved in the initiative, including DWR, the State and Regional Water Boards, the California Public Utilities Commission, the California Energy Commission, the Department of Public Health, the U.S. Bureau of Reclamation, and the California Urban Water Conservation Council.

Rick noted that several staff from these agencies were in the room to join participants in their discussions.

Rick Soehren, DWR, provided more detail. Topics included

- the origin of the initiative
- the definition of "per capita" – its does not include agriculture
- recycled water use is not included
- the ability to achieve the reduction
- implications for allocations and use
- linkages to bond funds and legislation
- possible implementation measures, and
- a request for advice regarding measuring the reduction and equitability

Chris Brown, California Urban Water Conservation Council, explained the initiative's workplan to participants. Issues that will be covered include

- defining a base year
- measuring "per capita" use
- the scale of measurement – statewide, hydrologic regions, utilities
- recognition for existing conservation efforts
- establishing targets and estimating savings
- planned agency programs
- possible new actions
- implementation plans, and
- measuring performance

Questions and Comments

1) A participant asked whether population increases would cancel out the per capita reduction. Rick Soehren explained that population growth would drive water use back up, but the initiative's aim was to at least reduce average water use, thus minimizing the overall increase.
2) A participant pointed out that the current goal of 20% reduction is less than that recommended in the California Water Plan Update 2005. Rick Soehren explained that the aim was to hasten efforts to conserve, not to limit them at 20%.
3) One participant asked why agriculture was not included, and another emphasized that goals and objectives should be set for agriculture as well as urban water use. Rick Soehren explained that per person water use is primarily urban. Regardless, DWR's Office of Water Use Efficiency is working with the agriculture sector to help it use water more efficiently.
4) A participant noted that the Legislature is considering establishing a similar approach to conservation in the sector. Rick Soehren agreed, noting that AB 2175 (Laird) might become a tool for the initiative. However, he encouraged participants to not limit themselves in today's discussions to what the bill contained.
5) A participant asked what was meant by "penalties." Rick Soehren explained that the topic had not been discussed in detail, but most likely this would refer to eligibility for grant funding from Propositions 50 and 84.

6) A participant noted that the geography of California is extremely varied, and recommended that a ratio of urban to agricultural water use be established for each region.
7) A participant noted that water wholesalers are related but not responsible for the actions of retailers, particularly those that are privately-owned. The participant then asked, if wholesalers were to apply for conservation grants, how would these be distributed to retailers? More generally, what is the relationship between wholesalers, retailers, and the 20% conservation goal? **This was noted by the facilitator as an issue for further discussion that involved governance.**
8) A participant asked how population would be calculated when an area had an influx of daytime workers, for example, Silicon Valley industries that draw people from all over the region. Rick Soehren replied that this was a great example of an issue where the Agency Team was seeking guidance.
9) A participant noted that population growth was an important issue that could not be solved by this initiative, but should be discussed as part of the effort. **This was noted by the facilitator as another outstanding issue.**
10) A participant asked how the location of conservation would be considered. For example, water used in the Delta watershed could be reused downstream, but in Los Angeles this might drain to the ocean.
11) A participant noted that recycled water can be toxic (and purification expensive), so encouraging this use should be carefully considered.
12) A participant commented that the overall goal of the effort needed to be clarified – is it simply per capita reduction, or sustainable water management? The latter might indicate a different target that takes population growth into account, and have a significantly higher conservation target more similar to previous Water Plan recommendations
13) A participant commented that clarification of objectives is also important because the use of conserved water will be contested – if conserved water is required of a district but then goes to accommodate new development, people will be upset, but if conserved water is used for an integrated portfolio of purposes that include environmental and water quality benefits and agriculture as well, this will create political will
14) A participant commented that "2020" is a political cliché that may not keep up with population growth, and felt that a per capita focus was misguided. The participant suggested that a better focus would be the earth and environment, and that conservation efforts should be oriented toward preserving fisheries and ecosystems, with per capita standards being based on those efforts.

Participants then broke into small groups and spent 45 minutes addressing a series of questions. It was emphasized that they did not have to come to agreement, the purpose was instead to understand their concerns and suggestions. The general framework was the creation of equitable policy – participants were asked to identify the grounds for setting a baseline and targets. The specific questions and answers from the different small groups are listed below.

1) Scale: The baseline and targets could be calculated at per capita urban water use scales ranging from statewide to regional, to agency, to the individual connection, etc. What should be the scale?

- the scale should be the retail water agency, recognizing there is a lot of variation

within an agency
- the scale should be at the agency level, but it is not clear whether this means wholesaler or retail
    i. more specifically, the initiative should focus on all communities with urban water management plans and 3,000 or more connections – small rural areas are hard to measure and should not be counted
- the scale should be the retail purveyor, working down to the service connection
- the scale should begin at the regional hydrologic or climatic region, and then scale down to agencies and users
- the scale be span retailers to cities to rural residential areas to tribal areas
- watersheds should be the focus, or a groundwater basin
- the scale should be at the water district level, and aggregated to the regional level
- the scale should be matched to grant funding areas in IRWMs
- the scale should be the water provider, whether agencies or retailers
    i. this level provides the most information – 80% of water usage is at that level, not individual wells
    ii. higher levels can be analyzed by aggregating this data
- the scale should be regional
- residential and commercial and industrial and construction use should be disaggregated
    i. other groups did not resolve this
    ii. differentiation could be based on the Standard Industrial Classification scheme

2) **<u>Baseline</u>: California uses water in different amounts and ways depending on whether or not it is a wet or dry year. How should decision makers factor this into the baseline and target years?**
    - the baseline should be simple, consistent, and reproducible
    - weather should be considered – coastal areas vary greatly from inland areas
    - a ten year average should be used, e.g., 1995-2005
        i. the average could be rolling
    - the baseline could be set several years back so that users would not have an incentive to increase their current use in the hopes of having a higher baseline when the program starts
    - trend information could also show agencies that were already conserving a lot, and to determine how much water could potentially be conserved in the next year
    - climate change should be a factor
    - some areas have already set up methods and established what they consider a normal or dry year, and these should probably be incorporated rather than forced to change
    - previous conservation efforts should be taken into account, but a maximum cap set on this
    - the driest year, or worst case scenario should be the baseline
        i. another participant commented that, depending on how you view the figures, consumption rises in dry years
    - it would be important to disaggregate interior and exterior use

- 1995-2005 could be used to illuminate climate change, given that the last few years have been very dry and irrigation has increased, while actual measurements of progress could begin in 2008
- the baseline should be established based on the goal of dry year planning – i.e., to have a sustainable water system that meets human and environmental needs even during the driest periods
- the baseline should consider that climate change will cause areas to become even drier, and that historical figures may not be sufficient
- the baseline should be a five year average from 2000-2005, and tied to census data for that period
- the baseline should go back to the early 1990s when urban water management plans were initiated

3) **<u>Reduction Targets</u>: Some agencies feel they have already done a lot of conservation already and are nervous about being penalized for their proactive programs (i.e., it's a lot harder to reduce by 20% if you've already picked all the low-hanging fruit due to cost, demand hardening, etc). Given that some agencies and communities are farther along than others, how should decision makers set the demand reduction targets and ensure they are fair to all?**
    - tiered water pricing should be the approach
    - people should be given credit for past efforts – those that have increased savings by 10% in the past decade should perhaps only have to do 10% more by 2020
        i. regardless, they should have to implement education and outreach programs about the success they've had
    - tradable conservation credits could be used
    - the target-setting process should involve land use decision-makers, NGOs, and water utilities, and use existing forums
        i. this brings stormwater pollution and runoff prevention into the mix
    - those who buy water at higher tiers could be required to offset their overuse in other areas, like disadvantaged communities
    - building areas could be mapped (e.g., those from the 1950s, 1980s) to help assess potential reductions based on plumbing systems
    - a bonus could be set for conservation over 20%
    - grants could be established to help companies or homeowner associations to introduce metering
    - targets must include a minimum mandate
    - should be based on implementing BMPs – these should be done right away and form the basis of standards, and be tied the criterion for getting funding
        i. this could be linked to a rating and credit system, where you get credit for implementing more complicated BMPs on a more or less complete basis
    - could be linked to carbon credits as well – if conservation occurs in an area that has a high carbon footprint and relies on water pumping and delivery, conservation could equate with a carbon credit
    - it's not clear whether reductions should be self-reported or involve a monitoring agency

- these could be relative to a regional water agency, with targets set for individual agencies in that area
    i. this is based on the idea that for each region there would be a minimal base use, and agencies that did a really good job of conservation and met this could be given a pass
- targets should link per capita figures with BMPs, and range of targets should account for coastal and inland differences rather than being an average
- targets should include recycled water
- targets should factor in previous conservation efforts, with a maximum cap
- targets should be institutionalized at the state level through improved building codes that call out efficient technologies – in some cases, existing technologies are overlooked not because they are prohibited, but because existing legislation does not mention them
- a series of consultants should be established to help districts that have minimal capacity conduct the necessary planning

4) <u>Performance</u>: Thinking about the scale and targets, how would you measure performance? What would be the implications of meeting/not meeting these targets?

- assessments should include the impacts to various parties
- metering
- performance should be expanded to include agriculture
- ranking of those that were doing a good job of conservation, which then would help determine who is more eligible for funding or projects or grants
- sister municipalities could be established – northern suppliers and southern end users, which would exchange information and ideas and coordinate their efforts
- everything should be metered, and reductions be credited
- grants or water transfers could be provided for agencies having trouble with compliance
- agencies should get credit for helping conservation in other areas – "adopt a water district"
- new developments should have dual metering for interior and exterior use
- districts will have differing capacities to set up and implement programs, so targets must consider whether they have the tools needed, auditing, the implementation of BMPs specific to those areas, or time extensions
- if political will is lacking, fees could be assessed or water allocations reduced
- districts that excel should be reward – e.g., a "conservation innovators" program
- performance measures must be set within a regional context
- should involve aggressive tiered rates based on BMPs – aggressiveness was mentioned in the Governor's letter
- could involve a "shame list" – areas doing poorly on BMP implementation would be posted online
- agencies should report to local land use agencies and the Governor's Office of Planning and Research so planners know who is doing enough conservation
- agencies should post their performance online, and this should include recycling
- accountability is key – many agencies have made conservation promises but not

implemented corresponding measures
- likewise, data and monitoring and reporting and auditing will be critical, and must be done regularly
- performance could be linked to different types of uses – different rates for landscaping, for example, because this does not require wastewater treatment and is nonessential
- water budgets are a planning tool for tracking progress on individual lots
- there should be shared responsibility between the supplier and end-user – there should be penalties and incentives for suppliers as well as customers
- assessments should consider the elimination of transportation and storage losses
- aid to disadvantaged communities to improve their facilities (e.g., leakage)
- performance should encompass more than just straight conservation – water use is also linked to energy use and transportation and environmental benefits, which should be factored into the conservation goal

5) <u>Interim Targets</u>: Given the magnitude of the change, and potential implications of meeting or not meeting targets, what are some potential approaches for setting interim targets?

- there should be one interim target – 10% by 2015
- approaches could involve retrofitting on resale – showerheads, toilets, meters
- linking to urban water management plans
- water cops to help people irrigate yards at the right times
- new development offsets and mitigation measures
- tiered rates
    i. rates and rate structures are very different across the state, with some being expensive and providing a good incentive
    ii. should accelerate integration of equipment so that use rate structures can address inequity between districts that do a lot and very little conservation, and use these gaps as a mechanism for imposing penalties
    iii. would need some oversight body, like the PUC on energy
- water audits to document savings
- for those utilities that do not meet the target, their water allocations could be reduced to health and safety amounts only
- should take advantage of the reporting mechanisms of the California Water Plan to track milestones
    i. a faster feedback channel will also be needed to allow for assessments, penalties, and responses on more than a five-year Water Plan Update basis
- targets should be measurable, timely, meet criteria, and signify milestones
- should be tied to urban water management plans, including BMPs
- targets should be based on urban water management plans, which already report progress every five years
- progress should be assessed annually, not just five years out
- there should be an incentive for meeting the goal before 2020
- all BMPs should be required to be fully implemented by 2012 or 2015

After the reporting, Rick Breitenbach asked participants to look at the handout that specifies future workshop topics and schedules. Rick encouraged participants to attend these events, and noted that there would be several opportunities for providing input on draft workproducts.

Rick Soehren, Rick Breitenbach, and Chris Brown thanked all participants for their thorough and stimulating input.

Lisa Beutler closed the day by noting that the results of the session would be reported to the Water Plan Advisory Committee at their July 9 meeting, and that she would ask AC members who attended today's session to help her in this. The results would also be reported to the Water Plan State Agency Steering Committee.

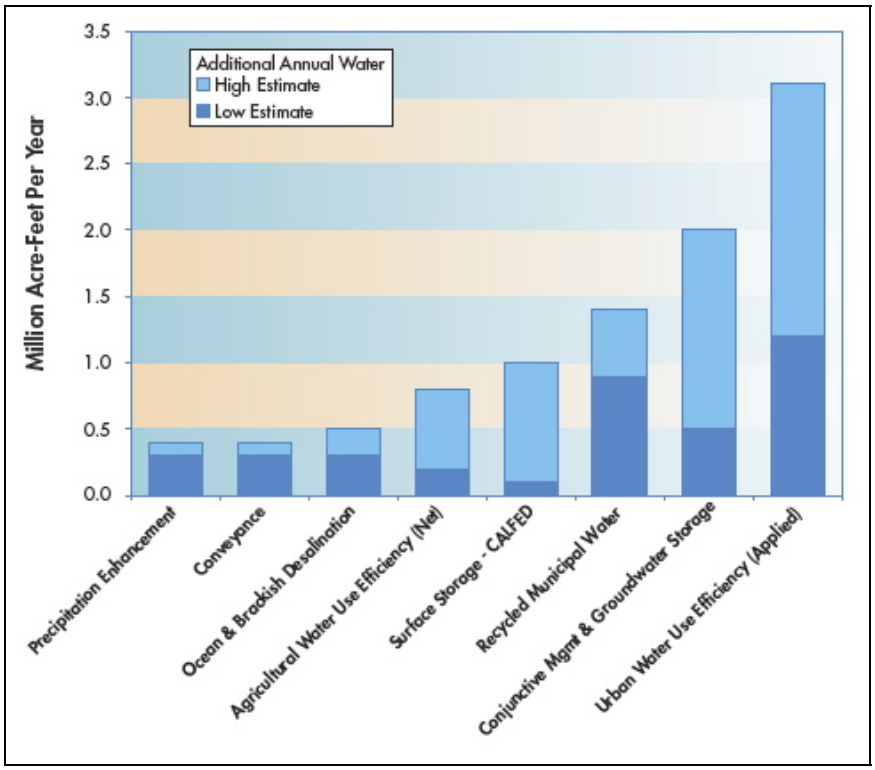
Lisa also noted that additional comments on the questions are welcome. These can be sent to Dorian Fougères, Center for Collaborative Policy, via the email address 2020comments@ccp.csus.edu

DAY TWO -- JUNE 3, 2008

5) Recap of Recent Events

Lisa Beutler opened the day by letting participants know that the agenda responded to requests from the 2005 Water Plan Advisory Committee. More specifically, it was requested that more robust quantitative analysis be conducted to clarify how resource management strategies might be most helpful, what outcomes were possible, and where the State should invest. The task was a perfect match for the day's participants because the strategies are place-based – they are specific to the geography and climate and activities of different regions. Eventually, their work would contribute to the revision of the following graphic from Update 2005:

Table 1: Range of Additional Annual Water for Eight Resource Management Choices



Water Plan Activities

Kamyar Guivetchi provided a brief overview of the Water Plan process, and how the day's activities fit within this. This included reviewing the different committees and working groups, as well as eight major activities:

1) updating the strategic plan
2) updating future scenarios and response packages – today's work
3) developing climate change scenarios
4) updating regional reports
5) updating resource management strategies
6) completing water portfolios for 1998 through 2005
7) improving information exchange, data, data integration, and analytical tools, and
8) incorporating findings and recommendations from companion State government plans

There are three main products: a draft Assumptions and Estimates report (already released), a public review draft of Update 2009 (to be released in December 2008), and a final version of Update 2009 (to be released in December 2009). Kamyar also noted that two rounds of regional workshops – a new activity for Update 2009 – have been completed, and that a third would be held during Spring 2009.

Regional Workshops and Themes

Judie Talbot, Center for Collaborative Policy, then reviewed the themes of the most recent round of regional workshops.

1) Tribal participation has increased significantly thanks to the efforts of a volunteer Tribal Communication Committee. A new resource management strategy dealing with forest management emerged from Tribal Water Plenary, hosted by Big Valley Rancheria in Lakeport, that they helped organize in January. Each regional workshop has also had Tribal participants. A Tribal Water Summit will be held sometime in mid-2009.
2) Regional reports have benefited greatly from the workshops – they provided region-specific information, provided new data sources, and ground-truthed ongoing activities. Participants will get five opportunities to review draft reports, beginning later this month.
3) The energy-water nexus was a topic that came up repeatedly in workshops. This information will feed into the Water Plan's Climate Change Technical Advisory Group.
4) Interregional linkages also emerged several times. People identified ways that they affected other regions or vice versa, and discussed how to convey these issues to a larger audience.
5) Watershed management – as linked to downstream flows, stormwater, new supply and existing supply reliability, conjunctive use, and storage – was a final theme.

Questions and Comments

1) Two participants noted that there is significant variation within a region – for example, some parts of the South Coast are rich and others poor in groundwater, and some parts of regions are net producers while others are net consumers of water – and this diversity needs to be clarified in regional reports.
2) A participant asked whether there were consistent contact persons to help pull together consistent information for regional reports, given that some areas are very large and have multiple IRWMs. She suggested that it might be more efficient for DWR to invite representatives from major water agencies together to discuss how to tell the region's story effectively, rather than producing drafts on its own and then circulating these to numerous disparate agencies and experts for review. Kamyar replied that each of DWR's district offices had a point of contact, and also that there would be five opportunities to review the reports to make sure that gaps were filled and representations were accurate. **Kamyar also said he would relay the idea of a workshop to discuss working drafts to the regional leads and design team.** Later in the day, the South Coast group agreed to coordinate the initial review of the upcoming South Coast Regional Report.
3) A participant suggested that the Roundtable of Regions would be a good group to ask for advice on how to establish a robust review process.

6) Developing Regional Response Packages and Group Reports

Participants prepared to develop regional response packages – mixes of resource management strategies that address the water management issues in their regions. Kamyar noted that one handout gave a brief description of the Water Plan's 29 strategies, and that another handout provided an example response package for each of the regions.

Mark Horne, DWR, explained that while Update 2005 had a flood management strategy, for Update 2009 this had been expanded to four strategies. The first, "modify flooding", referred to flood control that involves structural measures. "Modify impacts of flooding" referred to disaster preparedness and response. "Modify susceptibility to flooding" referred to the wise use

of floodplains – where they are located and how they are designed. The fourth, "preserve and restore natural floodplain functions," referred to letting floodplains do what they naturally do. The terms are derived from the National Integrated Floodplain Program created by FEMA in the 1990s.

Questions and Comments

1) A participant noted that each IRWMP has a regional water management group, and asked if the Water Plan had already reached out to those groups. The participant suggested it was very important to keep those groups aware of the Water Plan's work. Kamyar replied that these efforts were aware of each other, but that regional planning efforts might change, so the regional groups were not the authoritative governance groups.
2) A participant asked whether a legal definition of "flood damage" existed for Proposition 1E. Mark Horne replied that the IRWM guidelines will define this, and that AB 739 also defined other project-related benefits like flood attenuation, and possible susceptibility.

Paul Dabbs, DWR, explained that the second set of handouts drew on IRWMPs in the various regions, noted major objectives, primary and other plan strategies, and provided a space for participants to add, delete, or make changes to what they thought were primary strategies. Eventually the regional packages that participants create will be modeled in relation to three or more future scenarios in order to determine their robustness.

Participants then split into groups representing each of the Water Plan's hydrologic regions, with an additional group focused on the Mountain Counties (there was no Delta group). Not all regions were equally represented, thus some areas had less detail than others.

Lisa Beutler clarified that variation within a group was important and should be indicated on the sheets. Lisa also asked participants to differentiate between what was actually being done, and what was being proposed. **Judie Talbot, CCP, noted that the one-page sheets for each region would be posted online.**

1) San Francisco Bay Area Region

Regarding percentages or quantities targeted, the region was working to establish region-wide targets. At present each agency has its own targets for conservation, desalination, recycling, habitat restoration, and floodplain management, but little interconnection. The problem with developing regional targets is that they require interagency agreements. One agency may have money to conserve water, but cannot spend it elsewhere, so there is a need to develop agreements.

Regarding approaches, the region uses collaborative processes referred to as "voluntary regionalism."

Regarding short-term strategies, agencies are in a reactive mode – like with San Luis Reservoir being very low. There is a need for them to increase conservation and find sources of water other than their CVP contracts.

Regarding mid-term strategies, the region should incorporate statewide and interregional strategies.

Regarding long-term strategies, these should include adaptive management, joint powers authorities, global climate change, and infrastructure replacement.

Regarding interregional considerations, climate change and infrastructure cut across all regions and should be elevated. Reducing water demand (through, for example, conservation, reuse, and desalination) is also a high priority. One approach is to increase the density of residential areas and reduce lawns. Another is to protect – not just remediation – groundwater quality. Infrastructure asset management is also important, and affects most strategies. The group recommended that groundwater management be added to the resource management strategies. Another approach is to modify diversions from the Delta, particularly for the South Bay.

2) Colorado River Region and North Lahontan Region

Given available representatives, this group focused on Imperial Irrigation District (IID), with some indirect information on Coachella Valley.

Regarding percentages or quantities targeted, the Colorado River Water Delivery Agreement/Federal QSA (signed October 10, 2003) allocates specific amounts of water to Coachella, Imperial, Metropolitan Water District, and San Diego. IID is conserving 50,000 acre-feet, and will receive 492,000 acre-feet by about 2026. In the interim IID is restricted, and must fallow land for Salton Sea mitigation through 2017, approximately one-tenth of the land area.

Regarding approaches and strategies, IID is also introducing system efficiencies – seepage recovery and automated runs that allow growers to cut off and back out water without spillage. IID spent $4 million on modeling strategies for obtaining 492,000 acre-feet, which are now in the process of approval.

Regarding interregional considerations, the U.S. has recently begun talking with Mexico about an agreement where Mexico will not take Colorado River in return for the U.S. or districts paying for the development of water in Mexico through desalination or other measures. There is also a new agreement for how to operate the Colorado River during shortage periods like the past seven years. There are also new ways that the districts can store water in Hoover Dam.

3) South Lahontan Region

The group did not get through the questions, and focused instead on the objectives and strategies. Under water supply management they added the elimination of groundwater overdraft, and the maintenance of current groundwater levels, which would involve controlling and managing the pumping of groundwater. They also added the need to overcome institutional barriers, particularly in the Owens Valley. For water quality, they extended the idea of providing water that meets customer expectations from just drinking water to agricultural users, which would include managing runoff. For environmental resources management, they divided open space and the maintenance or preservation of natural habitats into two separate items.

Regarding strategies, for practicing stewardship they felt that the ecosystem should be managed to avoid impacts and eliminate the need to mitigate – which they characterized as a shift from reactive to proactive water management. For groundwater level maintenance, they felt that historical levels should be the target, a 100 year average if the data exists. For managing groundwater pumping, this might require regulations or legislative action. Stronger land use management controls will also be needed. They also emphasized more specific statements about monitoring and quantitative analysis, to help reduce the need for

interpretation. With regard to drinking water, there are strategies to improve water quality and downstream distribution, but the group felt it was also important to address the lack of access to drinking water and running water that many homes face.

4) Mountain Counties

Regarding objectives, the group added ecosystem services and interregional cooperation. They also recommended that DWR provide more precise definitions of objectives like "meet water pollution standards," which could refer to TMDLs or other standards.

Regarding strategies, the group also expressed concern about who determines regional priorities – the area is a source-water region and hydropower projects may be a priority, but they felt this is more a national than regional or state priority. It was important to recognize this when considering other regional priorities like ecosystem restoration – for example, the leakage from conveyance structures recharge groundwater for domestic use and also benefit the ecosystem. The group recommended that the "conveyance" RMS definition be expanded to include some of these unintended benefits.

Conjunctive management was another important strategy, but not in the way described in the RMS. Rather, it applied to working with lower parts of the watershed that aren't part of the mountain counties; and to the potential for groundwater storage through meadow restoration, which provides water supply while minimizing the energy needed for subsequent extraction.

Another strategy was interregional conflict – conflicts were viewed as ways to force the resolution of debates over major water facilities that are owned and operated by governance structures outside of the region.

Regarding interregional considerations, there is great concern about fisheries in the region and the San Joaquin Valley. The group concluded that interregional projects dominate fishery restoration options, with possibly the exception of trout. So fisheries management is an interregional issue. Water use is as well – mountain counties do not have a voice in decisions to build new dams or enlarge diversions other than protests or administrative proceedings. The group recommended that DWR help the region with interregional planning, cooperation, and partnering to solve some of these conflicts.

5) Sacramento River Region

Regarding objectives, interregional issues were a major theme. The group also added flood management as a primary concern, along with water quality – which affects the entire state, and includes both ground and surface water. This made pollution prevention a key strategy, and efforts to improve surface and groundwater quality through the TMDL process.

Regarding strategies, the group moved water quality improvement to a priority. It also expanded land use management to include not just urban but rural agricultural landscapes. It also elevated watershed management to a priority, and also outreach and education around water quality protection and water use efficiency.

Regarding approaches, for agricultural water use efficiency the group wanted to ensure the approach is equitable. Something lacking is a regional groundwater management approach, including the authority to do that. For land use and floodplain development, a low impact development approach was critical, along with pollution prevention. Interregional understanding and partnerships could also be formed between northern and southern agencies.

Short-term strategies would be crucial to stemming the loss of agricultural lands to urbanization. Equally important was an effort to map groundwater recharge areas. An agricultural waiver program – "irrigated lands regulatory program" – was addressing water consumption and pesticide use reduction. Conjunctive use rather than groundwater mining would benefit both the north and south.

With regard to agriculture, the aforementioned regulatory program and outreach efforts were being implemented to demonstrate the benefits of BMPs. The U.S. Natural Resources Conservation Service also has an environmental quality incentives program, which pays a share of the cost for drip irrigation. Habitat restoration and invasive species management is another key strategy for both endangered species and water supply and quality. State and federal programs also pay for or pay a share of the cost for agricultural easements like the use of ricelands for migratory waterfowl habitat in winter. There are also farm and ranchland reserve programs for open space protection, and wetland reserve programs.

6) South Coast Region

The group avoided identifying primary or secondary objectives because the region is very heterogeneous – even within Los Angeles County alone. They recommended creating a different table that allows sub-regions to identify the strategies they have utilized, quantify and describe this, and identify whether it is a major or minor emerging opportunity and can be used for modeling. The group agreed to coordinate the initial review of the upcoming South Coast Regional Report.

The group felt strongly that the WEAP model should include all 29 strategies, or as many as could be quantified. The group was also concerned that the results would be too general and not capture the region's true variability. This was particularly worrisome because the results would be used in Update 2009 and could limit the South Coast's future options. Their major concern with targets is that they get quoted without caveats.

The group felt that there may be opportunities for increased emphasis on conservation and stormwater and recycled water, as well as shifting land use from sprawl to infill development with corresponding lot and landscape codes and building standards.

The group suggested convening a meeting of all IRWM regions at the DWR Southern District Office, where existing information from IRWMPs and Integrated Resource Plans could be used to develop some targets for conservation, recycling, and desalination, etc.

Regarding interregional considerations, conveyance and associated water quality are primary concerns. If the Delta problems cannot be solved, a new RMS will be needed: contingency planning, which provides water supplies during an emergency. This would address what to do if a serious, catastrophic disruption were to occur.

Water transfers are also interregional linkages, and "net zero development" in terms of water use (i.e., new growth can only occur with no net increase in water demand) could involve interregional offsets – if consumption increased in one place, it could be reduced elsewhere. In this way, investing in water strategies in another region could provide benefits in the South Coast Region.

The group felt that the Water Plan should emphasize that California is one state with common problems, and all regions should work together. Regional analyses tended to separate or isolate regional issues from the statewide perspective.

7) North Coast Region

Regarding objectives, the group noted that the IRWMPs tend to be written from an urban perspective, while most of the region is rural. They group emphasized the need for more agency outreach to small, isolated communities, rather than reliance on urban IRWMPs to include their neighbors; important work was already being done in these watersheds.

Regarding strategies, the group moved agricultural water use efficiency up to primary, and urban to secondary. Pollution prevention and an accessible and sustainable water supply were also primary. The group also added the protection of traditional cultural uses of the ecosystem as a strategy – something that was broader than water and included fish and plants. Contact recreation was also a large concern, given the region's large number of Wild and Scenic Rivers. Conservation and allocation were also important, particularly because currently there is no inclusion of Tribal interests in water, or quantification or accounting for the current or prospective uses of water by Tribes. This should include water supply and quality for all instream uses, including cultural and contact recreation uses.

Regarding agricultural efficiencies, education and economic incentives for improved irrigation practices were supported. For water quality improvement, interbasin exports may need to be reduced, which would have interregional impacts – the Eel and Trinity Rivers' water quality could be improved, but would impact users in the Sacramento and Russian River Valleys.

The large rural population requires additional outreach regarding grant-making, and should be conducted at numerous rural locations rather than one large meeting that is a five or ten hour drive.

Regarding strategies, treated wastewater is being reused for irrigation or geothermal recharge purposes. Irrigation efficiency, in terms of both methods and timing, is being used more extensively. The U.S. Forest Service is renewing their role in watershed management and preserving base flows, which may improve supplies. The group felt it was important to restore seasonally appropriate flows to meet their objectives.

8) Central Coast Region

Regarding objectives, the group identified conjunctive use, system reoperation, modify flooding, preserve and restore natural floodplains, conveyance, recycling, and pollution prevention as primary. The group emphasized that water management strategies can all affect water quality, a major concern, so pollution prevention and groundwater storage may overlap.

Regarding targets, these vary by projects and sub-region. Some target a certain percentage of recycled water use, while others target certain uses of water for recycling.

Regarding strategies, some are specific to particular areas, like precipitation enhancement. The Monterey Bay National Marine Sanctuary has identified strategies that benefit the entire region. Short-term strategies include recycling and desalination. Mid-term include surface storage, groundwater recharge, modify flooding, floodplain restoration and preservation. Long-term strategies were considered beyond the existing planning horizon – the region hasn't gone beyond 2030 yet. Other strategies are ongoing, and really the full range is beign implemented.

Regarding interregional considerations, Delta issues loom large, and the effects of the State Water Project and Central Valley Project as related to transfer and storage. Another aspect was Santa Clara Valley Water District manages for flood protection and stewardship, and overlaps the Bay Area and Central Coast, so can affect both regions. If the District

prioritizes deliveries to the northern portion of the county, the southern portion and Central Coast region would suffer.

9) Tulare Lake Region

Regarding objectives, the group added agricultural viability, the improvement of water supply reliability and availability, and addressing the supply needs of disadvantaged communities that depend on single wells and have no backup supplies. The group felt there needs to be recognition that this is a closed basin where salts must be managed along with water supply.

For primary strategies, the group moved urban water use efficiency, conjunctive management and groundwater storage, recycled municipal water, surface storage (state), groundwater/aquifer remediation, and matching water quality to use to the primary category. Desalination was removed.

The group emphasized water use efficiency, and conservation outreach; the need to match water quality to use, including recycling and downstream use. For maximizing water supply flexibility, the group noted that groundwater banking should be in areas where water quality is protected, and that surface storage was another option.

10) San Joaquin River Region

Regarding objectives, the group elevated wetland enhancement, and put ecosystem restoration as a primary strategy. Desalination was removed.

The group noted that salts threaten water supply reliability.

The group noted discharge to the Delta as an interregional consideration, given the Delta water quality standards. Given that this involved statewide interests, the group recommended that water quality improvements be supported through economic incentives. The group also recommended increasing habitat and wetlands. For water supply reliability, the group recommended improving water quality (pollution prevention, groundwater remediation), efficient water use and matching water quality to use, and providing more storage. The group noted that agencies speak about "excess" San Joaquin River water, but it is not clear whether this exists, particularly with the San Joaquin River Agreement.

7) Quantifying Scenarios and Response Packages

Rich Juricich, DWR, provided participants with an overview of Update 2009 quantification activities and the WEAP – Water Evaluation and Planning – analysis platform. This included

- why the platform was chosen
- recent and upcoming activities, including the June 11 climate change scenarios workshop
- the draft Assumptions & Estimates report
- quantification of the resource management strategies, and
- evaluating resource management strategy performance

David Groves, RAND, gave an overview of the technical analysis. Compared with Update 2005, the current work was expanding scenarios to consider water supply, climate change, hydrologic variability, and flooding, and then using the WEAP modeling platform to evaluate response packages against these.

Two levels of analysis will be conducted – the first at the hydrologic region, the second at

the planning area. Given limited resources, for this update the planning area level analyses will only cover the Sacramento River and San Joaquin River Hydrologic REgions. These will include greater detail and resolution of actual flows. Climate change would be highlighted, with existing data used as a modeling input.

The scenario-based decision framework uses multiple scenarios to understand risks and their likelihoods. This allows for identifying which regional response packages perform well across a range of scenarios, and leads to robust decision-making.

The project is currently in the scoping phase, and models for the two planning areas are being built. Modeling runs and calibration will likely begin in September, with scenario analysis in early December.

Questions and Comments

1) A participant asked whether other modeling tools already being used for IRWMs could be used to evaluate success, because WEAP does not work in some platforms. **Paul Dabbs noted that the Statewide Water Analysis Network was still discussing this, and that there would be a process to determine how these might be merged.**
2) A participant asked whether the modeling efforts were coordinated with the Water-Energy and Land Use sub-groups of the Governor's Climate Action Team. Rich Juricich noted that they were.
3) A participant asked how calibration would be done, and how it would account for uncertainties. David Groves explained that calibration would rely on historical records for climate and precipitation, and use these to look forward. The robust decision-making methodology would be used to address uncertainties.
4) A participant asked whether there was a follow-up process for statewide assessment. David explained that modeling was occurring at different levels, and that results would be more or less refined depending on this.
5) A participant asked whether other modeling tools like CalSim could be used for the hydrologic regions. David reiterated that other activities were ongoing, and could help calibrate the planning area models. The workplan included looking at how these processes could inform one another.

WEAP Details

Brian Joyce, Stockholm Environment Institute, provided details on the Water Evaluation and Planning platform – a generic, object-oriented, programmable, integrated water resources management modeling platform. This included an overview of how analyses were built and represented. The modeling platform allows for stakeholders to engage in discussions about how to manage water. It is also transparent, flexible, and easy to construct different scenarios and evaluate management strategies. Climate-drivers can be input into the system.

Brian reviewed the various resource management strategies that the platform can model – approximately half of the 29. WEAP's flexibility also allows it to link to other models that may address the remaining RMS more fully. The Water Plan strategies covered included:

- agricultural water use efficiency
- urban water use efficiency
- conveyance
- system reoperation

- conjunctive management and groundwater storage
- desalination
- precipitation enhancement
- recycled municipal water
- surface storage (state and regional/local), and
- improved flood management

Questions and Comments

1) A participant asked how the platform handled floodplain management. David Groves explained this could be done in various ways or input through another model, and that this issue would be further explored in upcoming months.
2) A participant asked how groundwater recharge infiltration was measured, given the range of soil types found in the state. Brian Joyce replied that the platform examines specific catchment areas and streamflow data, and that the ability to model this in more or less detail depended on the level of analysis.
3) A participant noted that greater disaggregation of regions requires more calibration. David Groves agreed that there is a tradeoff between complexity and calibration requirements, and noted that the Water Plan was starting at a high level. Brian Joyce added that the Stockholm Environment Institute has already begun developing models for the entire Sierra that include calibration for the runoff and hydrologic response in each catchment.
4) Two participants asked about irrigation efficiency and crop productivity estimates. David Groves explained that crop usage is the first step, but that efficiencies in specific areas could be integrated. Manucher Alemi, DWR, added that the effort is modeling 20 crop types for the different regions, and it is possible to assess efficiencies both directly and indirectly. Brian Joyce also explained that the parameters for efficiency can be varied depending on how a particular strategy is characterized.
5) A participant asked how agricultural water demand was represented. Brian explained that it was represented as hydrologically driven, with demands determined by specific crop types and their requirements. The participant commented that in practice this was based on cost of an acre-foot of water. Brian and David replied that costs could be assigned to those deliveries and captured in the model, and that more clarification of methods was needed in this area.
6) A participant asked whether the effort was looking at interregional effects of climate change, and considering the value of protecting prime lands versus areas with poorer soils. Brian Joyce explained that this was again a question of how much one wanted to disaggregate the data. Irrigation efficiency settings would also influence how the model handles climate change. Regions could then be compared.
7) A participant asked whether urban water use efficiency would separate indoor and outdoor uses. Brian and David replied that the analysis would do this.
8) A participant asked whether the work would examine the last drought. Brian replied that it would not do this specifically, but that the model had been applied over that historic period.

Discussion

Participants were asked to deliberate and respond to four questions related to the modeling effort.

1. What else would you like to know about WEAP and how it will be used to quantify response strategies?
2. What indicators or factors do you use to determine how to invest in or evaluate management strategies? (e.g., average annual supply, dry year supply, economic costs/benefits, water quality benefit, environmental impacts/benefits)
3. What info or data do you have that might be helpful in applying WEAP to your region?
4. To what extent do you want to be involved with reviewing how management strategies are quantified in WEAP for Update 2009?

However, because many participants had to leave, **participants may respond to these questions at any time by using the following link:**
http://www.surveymonkey.com/s.aspx?sm=j8kTfJ372IbwuKFN2wpoyw_3d_3d

8) Next Steps

Kamyar Guivetchi and Lisa Beutler thanked participants for attending.

Kamyar noted the following upcoming events:

- June 11: Scenarios Workshop
- June 19: Statewide Water Analysis Network and Climate Change Techncial Advisory Group meeting
- mid-June: release draft narratives of 29 Resource Management Strategies
- July and early August: Resource Management Strategy Workshops covering all 29 strategies
- July 9: Advisory Committee meeting on draft objectives and recommendations for Update 2009
- mid-September: Water Plan Plenary