

**CCTAG Meeting Notes
July 16, 2008**

Raw notes: Q=question, A=answer, C=comment, CC=climate change, SLR=sea level rise

Agenda Item #2

Welcome/Introductions by John Andrew:

- Next CCTAG meeting date is Thursday, August 28, 2008. Location TBD, but will be in Sacramento.
- Today's meeting to focus on adaptation to CC today.
- Mike Anderson, State Climatologist, unable to attend today and we will be skipping his agenda item. Agenda item 6 regarding the WEAP update will now be agenda item 3. I still foresee us being able to maintain the time schedule as currently shown on the agenda and hope to get everyone out on time, if not a little early.

Comments:

Q: Will Mike Anderson be attending the August 28 meeting to discuss climate science?

A: Yes

AI #3

Incorporating Climate Change into Update 2009 Scenarios; the Water and Evaluation and Planning Systems Model (WEAP) by Rich Juricich

- WEAP will focus primarily on 3 different scenarios. These scenarios are based on:
 - o Current trends continued.
 - o Increased future growth above current trends with potentially the same or less regulatory oversight.
 - o Greater agency interaction and expanded regulatory oversight.

DWR is in the process of trying to quantify CC and other variables in WEAP Model. Currently DWR has or is taking steps to address comment regarding the WEAP and insure a flexible model interface with a robust analysis.

- Obtained qualified experts and their input to incorporate this info into the WEAP model.

Discussion of June 19 meeting notes from SWAN

- Notes from the June 19 SWAN workshop are being finalized and will be sent out to the SWAN list when ready.
- Staff noted that additional follow up is needed for WEAP in the following areas:
 - o Incorporate/address scenarios developed by the California Climate Action Team (CAT)
 - o Address questions regarding bias in the model
 - o Address questions regarding how abrupt climate change can or will be addressed in WEAP

- Probably will not be able to model for abrupt CC in Update 2009. However, the document will try to develop a narrative in document to discuss future needs for modeling for abrupt CC.
- Need to develop a definition as to what abrupt CC really means for decision makers to better enable them to make better policy decisions.

AI #4

Resources Agency Climate Team Adaptation Panel

Anthony Brunello - Deputy Secretary for Climate Change and Energy, Resources Agency

- The Resources Agency would like to develop a clear idea of where many of its organizations will be directing their resources in the next couple of years to address climate change.
- Direction and guidance would be developed from scoping plans such as that being developed by the CARB for AB-32.
- Central focus will be how Agency resources will be used to plan and manage for CC and plan for future changes. Key areas of focus will probably be:
 - Mitigation needs
 - Significant SLR predicted to occur from 2050 to 2100 and what infrastructure changes/needs might result from this
 - Fire Threat
 - Where are the areas of greatest threat or value to focus efforts and set priorities
- Resources Agency needs to formulate a roadmap for a CC adaptation strategy(ies) using the following:
 - Initiate climate vulnerability and risk assessment
 - Develop priorities based on risk
 - Develop coordinated policy guidance and direction
 - Form adaptation working groups to address CC
 - Develop priorities for each different sectors (water, forest, coastal, health, etc)
 - Develop CC adaptation strategies based on analysis
 - Improve action and prioritization to reduce vulnerability

Sam Schuchat - Coastal Conservancy

- Coastal zone is the area where major interactions between CC and ocean interface will occur.
- Current restoration efforts may have shorter life expectancy than originally anticipated, especially on the south coast. These areas may/will need additional analysis regarding their benefits.
- Current thinking regarding habitat conservation:
 - Need larger landscapes to provide continuity for species and habitat and prevent habitat fragmentation from occurring.
 - Endangered species preservation vs. ecosystem maintenance
 - CC will probably force us into the later.

- This would/will probably mean the loss of several species that will not be able to adapt to changes in the shorter run, but it would/will mean that we are able to maintain ecosystem functions and sustainability at a larger scale. This would mean the preservation of a greater number of species overall, over a longer time frame.
- State Parks is the largest single landowner of coastal property in CA and will be severely affected by SLR.
- Ocean Protection Council:
 - Currently discussing strategies that CA should adopt to address SLR.
 - Analyzing infrastructure risks along coast.
 - Has contracted with Scripps, et al., to look at SLR in greater detail
 - Has partnered with the ACOE to look at LIDAR measurements to the 10 meter level. This partnership may be dissolved if greater progress regarding measurements is not achieved within another 12 months.

Comments:

C: Phil Dietrich at UC Berkeley is currently doing detailed measurement work along coast. The OPC may want to contact him as a potential resource for coastal measurement work.

Rick Rayburn – California State Parks

- SP is very focused regarding the preservation of CA representative flora and fauna.
- SP will probably be looking at the bigger picture for addressing biodiversity when looking at the species adaptation due to CC. SP will probably try to focus on areas of unfractured habitat and ecosystem sustainability rather than individual species and niche habitats.
- Focus and priorities will be on large reserves in CA. Need large, preserved, existing landscape areas of sustainable size to ensure ecosystem preservation and sustainability. These would probably be manifested in 4 or 5 reserves within the 10 eco-regions of the State.
- Use land management strategies that will help reduce stressors on species within reserves.
- There is a major Federal report regarding species and habitat that was just released.
- Fire is also a growing issue/concern. Habitat type conversions are occurring due to hotter fires. Losing seed banks of some species due to hotter fires. This is especially true if an area burns again within 5 to 8 years for the following ecosystems.
 - SoCal coastal sage and chaparral
 - Conifer forest
- CA will lose a substantial number of coastal parks and recreation areas by 2050 due to inundation from SLR.
 - SP plans focus on what can be done for coastal protection now to protect future use.
 - Adapt capital outlay to focus on future needs and not on near-term improvements that will be inundated in the nearer future.

Armand Gonzales – Department of Fish and Game

- The decline of game species and fish due to CC will have a significant impact on DFG and how they currently manage these resources.
- Coastal wetlands and estuaries that are at significant risk due to CC and may have a great impact to species associated with them.
- Dissolved oxygen content in many waters will also decrease due to increased temps caused by CC
- Invasive species (e.g., quagga mussel) are of special concern and are likely to become more prevalent over time.
- Pest and vectors (mosquitoes) will probably need to a greater level of control and pesticides used for this task are usually not species specific. Many invertebrate species that provide a primary link in the food chain for major species are especially susceptible to chemical spraying. Warming trends will exacerbate this condition and increase pest outbreaks that will need to be controlled in order to protect public health.
- Flooding practices for early migrants may need to be adapted due changes in migration times caused by CC.
- Established migration areas and corridors currently under protection may change/shift due to warming trends and will need to be adapted somehow.
- Very difficult to develop strategic plans and strategies for CC due to lack of good information regarding how and when climate will change in the future.
- CDFG has internal climate change task force to see how to best adapt to CC.
- CDFG is looking at and evaluating risk and vulnerabilities for near future
- CDFG is reviewing CEQA documents in order to provide reasonable comments to project proponents to help address CC and mitigation needs for their projects.
- CDFG has climate action team
- Conducting region-wide meetings to see what the stressors are for each region and are helping draft strategies to address those.

Comments:

Action: Roy to send additional contact info to John Andrew, which he will distribute to Tony, et al.

Steve Goldbeck - San Francisco Bay Conservation and Development Commission

- BCDC was established in 1960 to control filling of SF Bay.
- CC is causing SLR.
- SLR can have a great deal of variability due to barometric changes.
- Developments that have been built within filled areas are most susceptible to SLR.
- There are env. justice issue on how BCDC will address protection for inundation caused by flooding and SLR from CC.
- Bay wetlands sediments that are needed for accretion are being attenuated upstream and this issue will need to be addressed when considering water, flood and SLR planning for the Bay.
- The north and central Bay are especially susceptible to sediment deficits.
- Salinity levels are expected to change in SF Bay and this will have very significant impacts to the Bay.

- BCDC doesn't have currently good elevation data surrounding the Bay which are needed to make good risk assessments and planning decisions.
- BCDC will need to cope with an expanding SF Bay due to SLR.
 - o BCDC has a coordinated adaptation approach to address each specific area using the following:
 - New Bay plan
 - Climate Resistant Estuaries Program
 - Work with the Dutch
 - Coastal Sector of State Strategy
- Numeric model are now being used by BCDC to calculate tidal surge and other factors in order to better map areas of susceptibility.
- BCDC does have studies that are looking at how wetlands will respond to SLR.
- BCDC is performing research regarding sediment deposition to analysis how additional deposition will help habitat to shift due to SLR.

Comments:

C: GGAS looking at very localized SLR that is being developed by the Dutch. Hans Peter Pleg using geodetic response? **Action** - Norm Miller to follow up with John Andrew who will get this information to Tony.

C: DWR opening Update 2009 to other agencies via companion plans to help DWR address CC and other issues endemic to water.

C: Regarding sediment, there needs to be a State comprehensive plan to address sediment. The need is especially apparent in SoCal.

A: Absolutely, there needs to be an aggregate sediment plan that address the entire state.

C: Everyone is concerned that final projections for impacts caused from CC are not more specific. Use of historical records not adequate any longer. Need to get away from planning for optimality as the goal and use adaptability as the goal for planning. In addition, many agencies are too focused on SLR and need to broaden out.

C: The invasive species situation will get to be very serious sometime in the future. The State of CA needs to address when an invasive species is no longer considered a pest, but now becomes the backbone/basis of a system.

C: DWR may need to add an additional RMS to Update 2009 to address sediment.

Q: When will authority change from the ESA and individual species of concern; to ecosystem preservation, maintenance, and sustainability?

AI #6

Draft Objectives for Update 2009 by Kamyar Guivetchi and John Andrew, DWR

The CC white paper has been revised as per comments received from various groups including the CCTAG. These revisions have been incorporated into Update 2009 draft Objectives, specifically for objectives 1 through 9. The document is still in draft form and has not been finalized at this time. John Andrew would like to have the document finalized by the end of August 2008. However, the release of the final document will be dependent on DWR management's review.

- Comments and input for Update 2009 are coming from a multiplicity of different venues (e.g., public meetings, steering committee, advisory committee, regional workshops, etc.). The current schedule is for the public review draft to go out by the end of 2008.
- The Update will include at least 30 different resource management strategies.
- Update 2009 will discuss how water supply and demand could change by 2050
- Vision, Mission, and Goals are the underpinnings of this document.
- To achieve the goals and actions w/n the Plan, it needs to identify the various impediments and barriers to accomplishing this goals.
- The first 9 objectives came primarily from the draft of DWR's CC white paper.
- The remaining objectives came from various State Companion Plans. A chapter in Volume 1 will highlight the top 30 out of 136 companion plans.
- Many of the companion plans are also currently working drafts, so the CWP will need to be adjusted as time moves forward.
- Articulation of the objectives is not considered to be "SMART" at this time. SMART objectives will spell out specific targets and time frames. This task will be addressed and accomplished in future drafts of Update 2009.
- Water Plan Objectives in brief:
 - o Fully implement regional water management
 - o Water use efficiency
 - o Flood management
 - o Resource Stewardship
 - o Conjunctive management.
 - o Improving data management and analysis
 - o SLR
 - o CC and new water Technology
 - o Sustainable funding
 - o Reduce energy intensity of water/wastewater management
 - o Sustainable Delta
 - o Protect and restore surface and groundwater quality
 - o Increase tribal participation and access to funding
 - o Prepare Response Plans for catastrophic events such as floods, drought, etc.
 - o Integrate policies for land use and water planning and management
- DWR discussed the draft Objectives with CWP Advisory Committee on July 9, 2008
 - o AC thought that Env. Justice needed to be addressed in more detail.
 - o AC thought that some objectives could be regrouped differently in order to lump some objectives and expand others. Comments were mostly organizational in nature as the AC thought that for the most part the draft Objectives were on track.
 - o AC thought that research on CC and New Water Technology should be broken into two separate objectives.
 - o AC did not understand why there was a separate objective for the Delta region. AC thought that this could be grouped with other objectives and not be addressed apart/separately from any other regions in the document.

Comments:

Q: Is Calfed statewide watershed effort included in CWP?

A: It needs to be, but at the planning area level. The Calfed effort is based on hydrologic boundaries and needs to be tied to political boundaries and watershed efforts. Planning efforts need to be based on a “watershed” basis.

Q: Would it be appropriate to specifically call out the Calfed watershed program?

A: Yes that would be a good idea and it should be done. The challenge is to get the different political entities to come together.

Q: Can you consider taking a similar tactic with groundwater management?

A: Yes, groundwater needs to be integrated into the IRWM, but not everyone is working on a groundwater management plan, let alone a watershed plan.

Q: Who writes a IRWM plan?

A: The responsibility for writing an IRWM plan varies for each region.

C: Just wanted to let you know I really like the measures addressed in objectives 1 and 3.

C: Objective 1 really does not fit the definition. Language needs to be more outcome based. It also needs to recognize the different scales at the geographic level.

C: Objective 1(?) needs to spell out who is who in the IRWMs (state, county, local, etc.)

A: Water governance is highly decentralized. What we are trying to do with IRWM is to get organizations to come together by using incentives. This offers opportunity to partner to solve larger problems in a cooperative manner.

C: Parties in regional plan have to have a MOU that all parties will agree to contractual agreements for funds provided.

C: IRWMs may have holes in their regions because they don't have land use authority.

Q: How much are DWR's hands tied by Prop 50?

A: Prop 84 is adding to requirements to obtain funding. In many cases an IRWM has to revise proposals issued under Prop 50 to obtain Prop 84 funding.

Q: Will Prop 84 require watershed planning?

A: No, but plans will need to be competitive to obtain funding. Those IRWMs that incorporate watershed plans into their proposal will be more competitive.

Q: Can B160 offer guidance regarding IRWM boundaries?

C: DWR needs to cross reference the different objectives to each other.

A: This cross reference was done in part in the CC white paper and somewhat with draft Objectives in Update 2009. The draft will probably include additional references to other objectives in future drafts of the Update.

C: DWR needs to be more explicit regarding intent of Objective 1.

A: The document in its final form will show linkage between the different goals and objectives.

C: Under related actions for objective 3, suggest identifying how DWR determines what a 200 year flood event is.

Q: Why 200 year flood event?

A: These flood numbers came out of Flood SAFE Strategic Plan companion plan, and were not developed solely for CWP purposes.

Q: Obj. 3, when talking about re-operation and infrastructure, is this code for ACOE. If so, this should be called out.

A: Yes, much of this is focused on ACOE recommendations.

C: Obj 8, tool development falls between the cracks in many instances when discussing research and technology.

A: We try to capture tools under Obj. 6.

C: There needs to be a broader overview regarding energy and its carbon footprint for water management and use (e.g. desalination). More guidance at State level for assessment levels is needed.

A: We are bringing forward requirements of the Desal Task Force. Also, we are in the process of developing indicators for sustainability that can be included in the CWP.

Q: How do you revamp governance process to address legislative requirements/recommendations? Does there need to be an objective added to address this?

A: Can identify changes and recommend those for legislative action. Also, plan can identify regulatory processes that may need to be changed.

C: Obj 12, the interface with air quality and how it impacts water quality needs to be addressed, especially for particulates and ozone. It should also address nitrification and acidification of surface waters.

C: When looking at water use efficiency, DWR needs to focus more on ag use than for urban. The biggest impact for use is by ag.

A: Water use efficiency was taken from Governor's letter addressing 20 percent by 2020. However, we note that ag also needs to be addressed in regards to water use efficiency.

C: Objective 10, the largest energy used for water is not from conveyance, but from heating, treating, and other consumer uses of water. DWR needs to add text to explain this.

A: Yes, DWR can address this other energy use here or in the overview.

C: It would be good to have a linkage under Obj. 10 for funding portfolios related to carbon sequestration and stewardship.

C: Obj 5, In order to better develop hydrologic budgets, you need better data for models to be developed. Especially for ground water and ag use.

C: There are issues with prescriptive metrics being used for timelines or quantity. CWP should offer a range of metrics instead.

A: DWR wanted the CWP to have more specific goals rather than vague targets for the plan. That is why these metrics were included. The metrics can be adaptive over time, but you need to have a starting place.

C: It is important to add a bullet to partner with public health for Obj. 4.

Q: Does there need to be an action item regarding peat accretion?

C: It would be nice to thoroughly address land use in the objectives and maybe tie land use to the other objectives.

AI 7

Next Steps and Plan for August 28 Meeting by John Andrew, DWR

- Comments due by July 31.
- Next CCTAG meeting in Sacramento on Thursday, August 28, 2008.