

Meeting Notes

Lower Santa Cruz River Basin Study Project Team Meeting #4 Agenda

September 27, 2016 1:00 to 2:30 p.m.
WEBINAR

Attendees: Eve Halper (Reclamation), Bailey Kennett (UA WRRC), Kathy Jacobs (UA CCASS), Kathy Chavez (Pima County), Jim Dubois (Pima County), Bob Hedden (Upper Santa Cruz Providers and Users Group – USCPUG), Diana Kelts (Freeport McMoran), Jeff Tannler (ADWR), John Kmiec (Marana Water), Mike Block (Metro Water, Peter Abraham (Oro Valley), Mead Mier (Pima Association of Governments), Sue Montgomery (Attorney for Pascua Yaqui Tribe), Asia Philbin (Marana Water), Selso Villegas (Tohono O’odham Nation), Wally Wilson (Tucson Water)

1. Welcome and Introductions (5 minutes)

2. Basin Study Update – (Kathy C and Eve- 5 minutes)

Climate Projections

- Reclamation, UA and Hydrological Research Center (developers of input into hydrologic models) are working on project scope for climate and hydrologic model
- Climate Tech Memo

Demand Sub-Team

- September 30 meeting with Ken Seasholes and Demand Sub-Team leads – to work on demand projections

Project Team Meeting

- Nov 1st – K Chavez will send a meeting invite today
- Proposed Agenda
 - o Confirm the climate recommendations we are discussing today
 - o Update on climate modeling
 - o Update on demand baselines and projections
 - o Update from O&C Sub-Team

3. Review of Recommendations and Discussion Points Document -
(Kathy Jacobs - 60 minutes)

At the May 20th meeting, we discussed steps to move forward; the decisions we came up with are really important, including for the contracts that Reclamation is developing for the modeling. Decisions we’ll be discussing are based on the flip chart from that meeting and Bailey’s meeting notes.

1. Does the Project Team want to evaluate a high greenhouse gas emissions, “worst-case” scenario?
 - a. Mike B: the duration of the modeling we’re looking at, it’s 50-60 years?
 - i. **The Study goes out to 2060. We can note this here or at the end of the document.**
 - b. Bob: What is the magnitude of your worst-case scenario? Typically, when you’re running your business you’re running on a risk management basis. How are we determining what is going to be the worst-case scenario?
 - i. We’re going to do that in a constrained environment. We’re looking at how climate change will impact the water supply and demand environment. We’re not looking at other factors like contamination or terrorism to the CAP canal. It is quite likely that CAP inflow will be lower than what has been planned locally.
 - c. Bob: What temperature change magnitude are we looking at?
 - i. We’re looking at the upper level of emission scenarios – about 6-8 degree F increase. We’re operating within a set emissions scenario – we’re not making them up ourselves—we’re staying with what National Climate Assessment (NCA) used and what has been assumed in Colorado River Basin Study (CRBS).
 - d. Mead: Can we still consider a “best-case” scenario? Has a feeling that people need to hear what we minimally need to do to prepare; ie, easy adaptation measures.
 - i. That would be a different approach. If others agree, we’ll need to reconsider. Best case and most likely are not the same.
 - e. Tannler: Will there be a “base-case” scenario in addition to the “worst case”?
 - i. Multiple water planners have these plans already. What we’re talking about is adding in climate change, where a lot of “base cases” don’t. Currently, we’re calling this “status quo”. Do we want “worst”, “status quo/base”, and “best”?
 - ii. Eve: Truckee Basin did a scenario “without climate change” – this would be a “base case” example.
 - f. Mead: the “base case” is essentially the “best case” I was thinking of.
 - g. K Jacobs: the “base case” is different than the “best case” because “best” would consider climate change
 - h. K Jacobs: I think the “most likely” is fairly value-laden. Should we use B1 scenario (the best case emissions scenario)? This could be much easier to defend than a “most likely”.
 - i. Wally: Yes, we need something to compare. We need to bookend the study. The “worst case” would serve us (the academics) – but we also need something more mild, focusing more on the demands we have control over.
 - j. Asia: Supports using B1
 - k. K Jacobs: Under the NCA and International Panel on Climate Change (IPCC) – A2 (worse-case, business as usual) and B1 (best case, accounting for active carbon sequestration and emissions reduction) were

utilized in the last report. Not the most current. B1 improves because we ramp up carbon sequestration and emissions control.

- I. Eve: Would a “without” climate change scenario be helpful, to isolate impacts?
 - i. Wally: We’re not in a community that’s really questioning existence of climate change.
 - ii. K Jacobs: Well you may want to show the differences in order to isolate climate impacts. Where we are today might not be as robust as where we need to be.
 - iii. Wally: I don’t disagree, it’s about how much effort is required.
 - iv. K Jacobs: We can look at three scenarios:
 1. Base case (without climate impacts; could just utilized TAMA Fourth Management Plan or numbers from individual providers, wouldn’t have to run a model)
 2. Best case (B1 emissions scenario)
 3. Worse case (A2 emissions scenario)

2. Does the Project Team want to include projections from a dynamically downscaled climate model in its selection of climate scenarios?
 - a. Using dynamically downscaling – this will likely have more “severe” impacts than just considering the inflows analyzed in the Colorado River Basin Study.
 - b. Consensus: Yes

3. Does the Project Team want to evaluate climate impacts at a Colorado River Basin scale, a local scale, or both?
 - a. Wally: we have to do both. We exist on local groundwater and a distant river supply.
 - b. K Jacobs: Yes, it’s also in the Plan of Study. And it has impact on riparian vegetation.
 - c. Mike: We also have recycled water and remediated water. For recycled water, we don’t know if it’s going to be a constant, will decrease or will increase under climate impacts. Remediated water has other impacts, rather than climate change.
 - i. K Jacobs: Should we explicitly add effluent as a third source that would require evaluation of climate impacts?
 - ii. Wally: pretty much all water will be consumed, whether it’s potable or effluent. Yes, it’s a source of water for riparian habitat. I think it’s a function of potable supply.
 - iii. K Jacobs: Do we look at the way we use effluent in the “options” section with regard to riparian systems? Or also in demand modeling – ex, how much is used on golf courses?
 - iv. Jim DuBois: In addition to changes in infrastructure, changes in the reclaimed system need to be considered.
 - v. K Jacobs: Yes, what you’re saying is it will need to be considered in the options section. But do we also want to look at the impact of

climate on reclaimed? Instead of a full model, we could have a section where we quantitatively discuss impacts.

1. Wally: We could include language about impacts. I don't see the system increasing much – we're not seeing new customers in the future for business expansions.
2. K Jacobs: Final determination: We should have a section in the document that describes the impacts of climate on supply and demand of reclaimed. But don't need model to focus on this.

4. How will impacts to water demands (municipal, agricultural, evapotranspiration) be adjusted to account for climate change?

- a. KJ: How are we going to consider the impact of climate on demand? There's a lot of factors, could open up can of worms. If we look at too many variables, we'll have a lot of work on our hands. We could use any demand assumptions we want (no agency will get involved, unless it's on the population side). We can't make different assumptions about the climate on the demand side than the supply side. We want supply and demand to be constrained by the same climate scenarios.
 - i. K Jacobs: We could do sensitivity analysis to look at how different aspects/sectors (i.e., agricultural, riparian needs) are affected on the demand side.
 - ii. Mike: Sentence is unclear: add "sensitivity analysis of demand".
 - iii. We can do a lot of this work with the CAP model – we can play with the supply and demand scenarios quite a bit. Ken Seasholes can change assumptions easily. To simplify, it would be easiest for Sub-teams to build off of Ken's assumptions.
 - iv. Wally: We're meeting with Ken on Friday, and will be able to provide feedback after then. CAP projections are pretty on-point for Tucson Water around 2060, though some outlying systems need more work.

5. What is the appropriate number of climate scenarios to evaluate? Fewer scenarios make the analysis simpler, but a greater number of scenarios provide a wider range of future conditions.

- a. Rehashes the points in Items #3; Items #4 and #5 are more for documenting discussion than raising questions for decisions.
- b. KJ: Do we want to look at seasonality? Seasonality for evapotranspiration lends itself more to modeling than a quantitative description. If we're going to do that, Chris Castro and Eylon Shamir will need to know; they'll need to incorporate them in the model (thus we'll need to incorporate them into the statement of work).

Summary

- c. We are changing our original plan, we'll be looking at: Base case, best case, worse case.
- d. We will use the dynamical downscaling information in the study.

- e. We will use both Colorado Basin and local-scales, while quantitatively describing effluent impacts from climate; also looking at seasonal impacts.
- f. We want capacity to analyze infrastructure - what infrastructure or projects could be useful in addressing the impacts. This may need to be more explicit than it is right now, in conversations with Chris, Subhrendu and Eylon.
- g. K Chavez: The Summary of Recommendations document will be finalized in advance of the next project team meeting, so the group can approve it at that meeting.

4. Brief Update on Demand Sub-Teams (15 minutes)

- a. Municipal Demand – Wally Wilson
 - a. Muni group will be getting together Friday with Ken Seasholes of CAP – discussing some of the issues they have with CAP:SAM results
- b. Agricultural Demand – John McKinney
- c. Industrial Demand – Bob Hedden
 - a. Also meeting with Ken Seasholes on Friday. He’s got industrial numbers for PUG. Industrial numbers don’t account for golf courses, some are accounted for under private water providers. There is a shortfall of 15-16,000 acre-feet; 4-5,000 af shortfall if considering effluent use on courses. The TAMA Fourth Management Plan has numbers on this industrial demand. The two mines: they’re anticipating that they’ll be operating at this level into the near/moderate future; though economics may have some bearing on their future use.
- d. Outreach & Communication
 - a. Tentative date for first Public Meeting: November 30th, 3-5pm at PAG
- e. Environmental Sub-Team
 - a. Will be meeting Oct 26th, 1:30 at PAG
 - b. Mead is creating a formal invitation to this group (with revised position descriptions), will distribute

5. Next Meeting Time and Topics

- a. Next meeting topics: Status of Climate Change Projections, Adoption of Climate Recommendations Document, Presentations of Baseline Demand from Sub-Teams, Outreach & Communications Sub-Team Update and Engagement Plan
- b. Proposed Date: November 1st at 10:30-12:30 at PAG