COLORADO RIVER RISK STUDY

PHASE II

TECHNICAL ADVISORY COMMITTEE WEBINAR

JUNE 8, 2017

Hydros Consulting

OUTLINE

1. Status Report
2. Discussion of Scenario Assumptions for Task 1 (CRSS)
3. Next Steps

PHASE II TASK 1:CRSS MODELING

3 Modeling Topics:

1. Test the effectiveness of a water bank in providing additional water to Powell without requiring drastic single-year reductions in CU.
2. Evaluate system risk using paleo-hydrology data set.
3. Sensitivity analysis of risk profile to key model variables (primarily demand and hydrology)

PHASE II TASK 1:CRSS MODELING

Model Scenarios / Assumptions

1. Test the effectiveness of a water bank in providing additional water to Powell without requiring drastic single-year reductions in CU. Banking criteria include:

- Max Bank size = 1.0 MAF? 2.0MAF?
- Contributions = 100 kaf until full, 200 kaf during usage (4 states) other volumes?
- Disaggregation of reductions? By basin, sector, state, etc?
- When to use? To maintain power (3525)? Compact deficit avoidance?
- Assume non-equalized storage (not subject to 07 guidelines / equalization)

PHASE II TASK 1:CRSS MODELING

Model Scenarios / Assumptions

2. Paleo-hydrology sequences. Utilize Paleo-resampled data for CRSS (most similar to dataset used for Yampa study)

- Recommendation: use baseline and combined DCP scenarios, then compare to Stress Test, Period of Record, and CMIP-3 outputs.
- **Ideally we would make a decision moving forward to reduce the number of hydrology ensembles used for modeling. If past patterns hold true, the “worst” to “best” futures are CMIP-3, Stress-Test, Paleo, and POR.

PHASE II TASK 1:CRSS MODELING

Model Scenarios / Assumptions

3. Sensitivity Analysis simulations. Perform a series of simulations with variable demand and hydrology sequences to better understand sensitivity of model and system to inputs.

- Hydrology: +/- 10% variations in flow? Utilize one or more of the existing data sets and generate statistics from mean values?
- Demands: Sc. A and Sc. 90%D1sequences.
  - Recommendation is to use 95% and 85% of D1 as well, and develop statistics from those runs.
- Operational scenarios (2): baseline and combined DCP

PHASE II TASK 1:CRSS MODELING

Other Modeling Tasks / Questions

1. We briefly discussed the question of initial conditions for these runs during the last TAC meeting. System conditions have improved, but we don't want to "chase" conditions by doing an entire new set of runs.
   - Suggestion: perform sensitivity analysis of risk profile to initial reservoir conditons.
2. Do we want to continue to assume DCP implementation? Particularly for the Lower Basin?
3. Any change in assumptions for post-2026 operations
   1. Conservative assumption for UB is continuation of guidelines
4. TBD enhancement in CRSS – worth pursuing? Political issues? Technical issues?

PHASE II TASK 1:CRSS MODELING

Next Steps:

1. Implement and run these scenarios (June / July)
2. Report back to TAC on results (2nd half of July)
3. Identify and implement additional / follow-on CRSS runs

4. Lay foundation for Task II (July)
    1. TAC meeting to discuss StateMod (preferably in person w/ Andy and other StateMod experts)