

Review of Staff Proposal and Modeling

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Wheeling Stakeholder Meeting
February 4, 2014

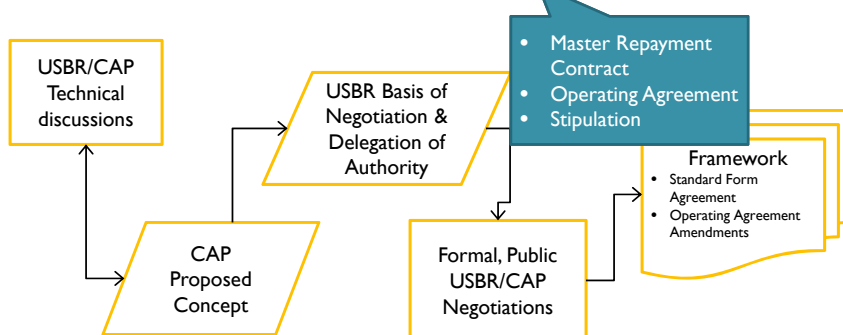
Wheeling Process

- Conceived of as a two step, sequential process
 1. Address technical issues between CAP & Reclamation related to the owner/operator relationship
 2. Re-engage stakeholders on "sharing & paying" policy issues



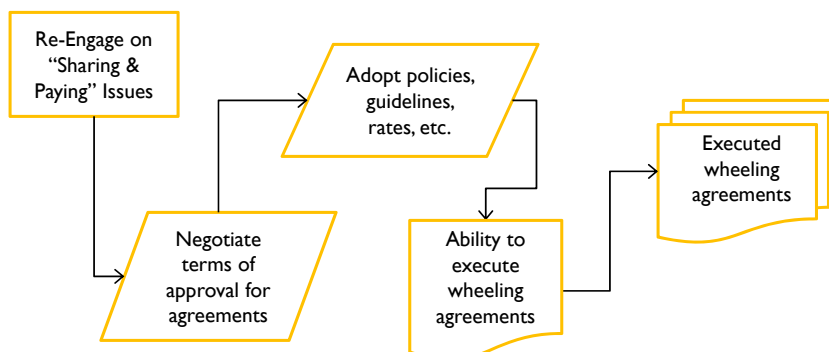
Step 1

- “How will wheeling work within the owner/operator contractual framework?”



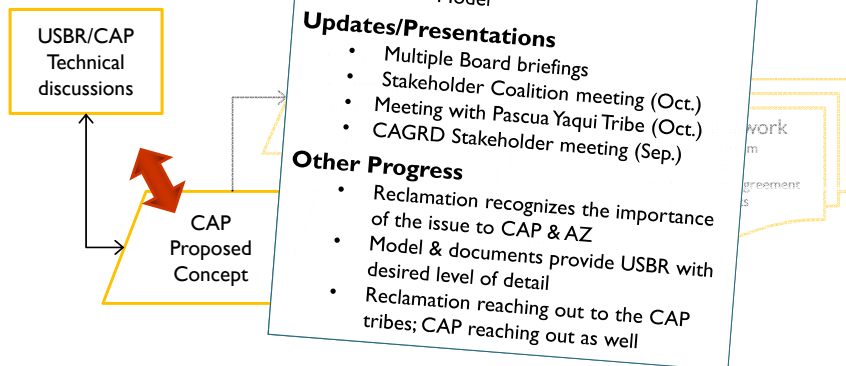
Step 2

- “How will wheeling work from a policy, equity and cost basis?”

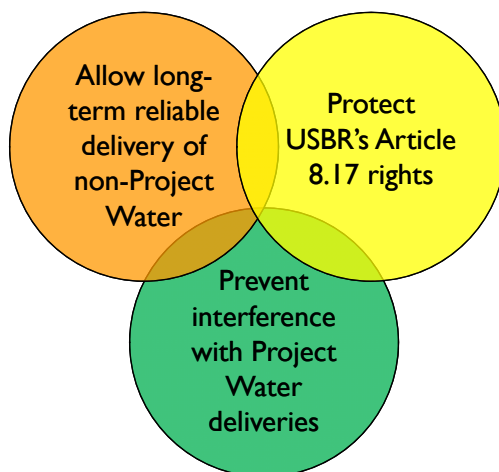


Step 1

- "How will wh owner/oper



Wheeling Goals



Goal 1

- **Prevent interference with Project Water deliveries**
 - CAP is a Federal project built to deliver Project Water
 - Consensus was reached in ADD Water that Project Water users shouldn't be disadvantaged
 - Even if requesting more than 11% in a single month
 - Negatively affecting Project Water could drag in unrelated Federal issues
 - The wheeling provisions in the Master Repayment Contract are unique to CAP



Goal 2

- **Allow long-term reliable delivery of non-Project Water**
 - Long-Term
 - Most of the end uses are long-term
 - A solution for long-term also works for shorter-term
 - Reliable
 - Most end uses require high reliability
 - Paying for system improvements creates level playing field
 - "Interruptible" options that use existing capacity present additional challenges to 8.17



Goal 3

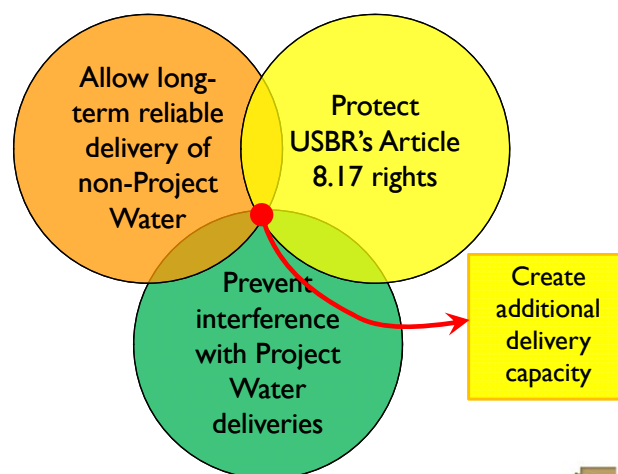
- **Protect USBR's Article 8.17 rights**

- The U.S. has defined rights, which they will defend
- Reclamation understands the importance of wheeling, and wants to be able to say "Yes"...
- ...but the most certain way to protect their rights is to say "No"

So, preserving future options for the U.S., by fully protecting 8.17 rights, is the clearest path to get to "Yes"



Wheeling Goals



Staff Proposal

- **White Papers**
 - Overview of Staff Proposal
 - Annual Operating Plan Process
 - Peak Suppression Facility concept
- **Standard Form of Wheeling Agreement**
 - Only partially fleshed-out
 - Borrows heavily from existing contracts, Summary of Emerging Consensus, and other agreements
- **Revisions to the Operating Agreement**
 - Quantification procedures
 - System Improvement Fee purpose
 - 8.17 scheduling
- **Wheeling Model**



Staff Proposal

- Overall proposal has been unchanged for quite some time
 - CAP system delivery capacity is increased incrementally
 - Reclamation certifies quantification of additional capacity
 - Improvements paid by wheeling parties
 - Improvements allow CAP system to be operated in ways that protect Project Water deliveries and Reclamation's 8.17 rights
- However, greater specificity has brought additional scrutiny and complexity
- Some concepts differ from the conventional approach



New Capacity: Conventional

- **Phased View**
 - Additional system capacity added through time, but as part of a general expansion program
 - Wheeling contracts and new capacity are loosely related, based on phases
 - Offers flexibility, but can lead to charges that “interference” is occurring



New Capacity: Staff Proposal

- **Wheeling based on Certified Capacity**
 - Requires a tight connection between system improvements and the ability to issue wheeling contracts
 - Improvement projects go through a Reclamation review process to quantify the capacity increase
 - Quantification based on the physical ability to move more water
 - Proposal also includes a method to address seasonal peaking constraints



Use of Capacity: Conventional

- Prior efforts have generally framed wheeling in terms of an *allocation* of capacity
 - Big round numbers for existing capacity (e.g., 1.8 MAF – 1.5 MAF = 300 kAF)
 - Divvied up among users (e.g., the Interim Set-Asides)
 - Big round numbers for expanded capacity
 - Operational realities are sometimes glossed-over



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- Capacity is a dynamic concept**

 - Colorado River supply varies
 - Maintenance reduces capacity
 - Location of deliveries affects total capacity
 - Timing of demand creates seasonal constraints
 - System “baseline” changes over time
 - Some capacity is needed for end-of-year operations



Use of Capacity: Staff Proposal

- **“Serve as you come”**
 - Wheeling contracts are tied to in-hand water supplies
 - Regulatory review (by ADWR & USBR) limits speculation, gaming and capacity reservation
 - Each transfer evaluated on its own merits
 - Allows environmental and third-party impact review
 - Incremental approach is based on more realistic volumes for both supplies and demands
- **Operational flexibility**
 - Per current practice, up to 50 kAF reserved to ensure full diversion of Project Water supply



Seasonal Constraints

- **Conventional Approach**
 - Add infrastructure at pinch points
 - Rehab siphons
 - Add lining
 - Increase flow rates
- **Staff Proposal**
 - Add new recharge capacity at end of system: “Peak Suppression Facility”
 - Allows time shifting of deliveries to subcontractors performing Annual Storage & Recovery
 - Offers flexibility to match peaking needs
 - Extra storage capacity can provide other regional benefits



Annual Operations

- **Conventional Approach**

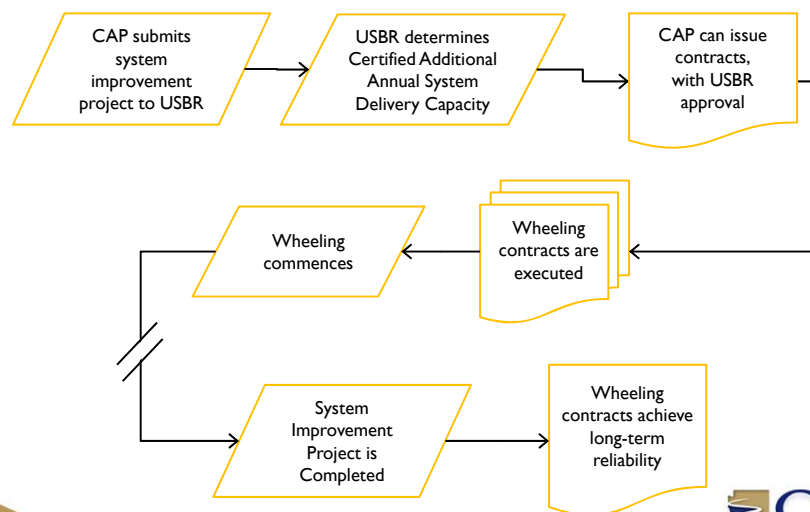
- Annual Operating Plan has low prominence

- **Staff Proposal**

- Annual Operating Plan process is the primary method for resolving rights and priorities
- 1.) Project Water (including Excess), and 8.18 non-Project Water after improvement projects are complete
 - Monthly 11% maximum enforced on 8.18 first
 - 2.) 8.17 non-Project Water
 - 3.) 8.18 non-Project Water before improvement projects are complete

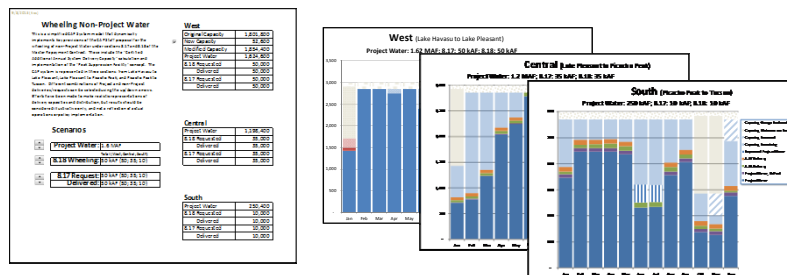


Staff Proposal Sequence



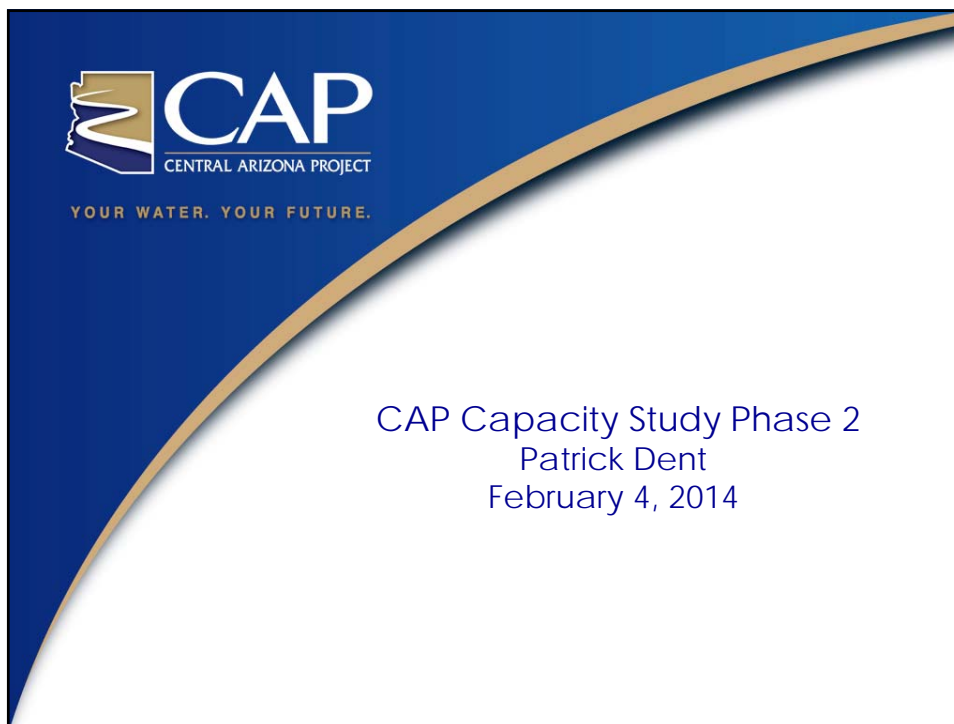
Wheeling Model

- Interactive tool to evaluate a range of water supply, delivery and wheeling scenarios
- Simulates key provisions of the Staff Proposal



Questions?





CAP Capacity Study 2007

Original capacity study focused on expanding the CAP of the Hayden-Rhodes Aqueduct (Bouse Hills to Salt Gila PP). The impetus of the study was a 2004 Board Strategic Initiative.

1. Stated scope was flow capacity upgrade from 3,000 cfs to 3,600 cfs, Bouse to Salt Gila (166 canal miles)
2. Assumed 2002 demand curve, did not contemplate future demand scenarios
3. Did not contemplate capacity improvements in the context of the CAP wheeling proposal



2007 CAP Capacity Summary Table

CAP Capacity Improvements Cost Summary					
Annual Capacity	Capacity Improvement Project(s)	Aqueduct Flow Capacity	Service Factor	Cost (millions)	Cumulative Cost (millions)
1.8 MAF	None (Existing Capacity)	3000 cfs	83%	0	0
1.9MAF	Siphons and Lining for Segment 3B	3000 ¹ cfs	88%	54	54
2.0 MAF	Plant Upgrades at Little Harquahala and Hassayampa pp ²	3000 cfs	92.5%	18	72
2.1 MAF	Construct Spillways for each Segment, Centennial Siphon	3300 cfs	88%	22	94
2.2 MAF	Canal Lining Segments 1 through 3A, Construct, Modify Tunnels and Siphons	3600 cfs	85%	153	246

Capacity improvements in 100K increments

Capacity to address System Summer Peaking (Peak Suppression Facilities)

¹ Segment 3B capacity increased to 3600 cfs. This project will increase the system capacity by increasing the volume of peak summer deliveries from Lake Pleasant
² \$15.2 million for the pump upgrades, and additional \$2.8 million of upgrades to reduce the duration of half plant outages.



CAP Capacity Phase 2

Given the context of the wheeling proposal take a closer look at the potential projects to more specifically evaluate resulting capacity improvements and provide conceptual level costs

1. Pumping Plant Improvements
2. Aqueduct Improvements
 1. Spillways (Unsteady Modeling of Aqueduct)
 2. Siphons
 3. Lining as needed
3. Qualitative look at Canal lining Projects



CAP Capacity Phase 2 Deliverables

Internal team working with CAP Engineering Resources.
Currently Scoping the effort and coordinating with work required
to support CAP's by CIP program

External support on unsteady modeling effort to evaluate the
feasibility of Spillway alternatives

1. Cost estimates for specific projects
2. Draft capacity quantification for specific projects
3. Evaluate feasibility of spillway alternative
4. 9-12 month duration

