

Business Perspective on Water



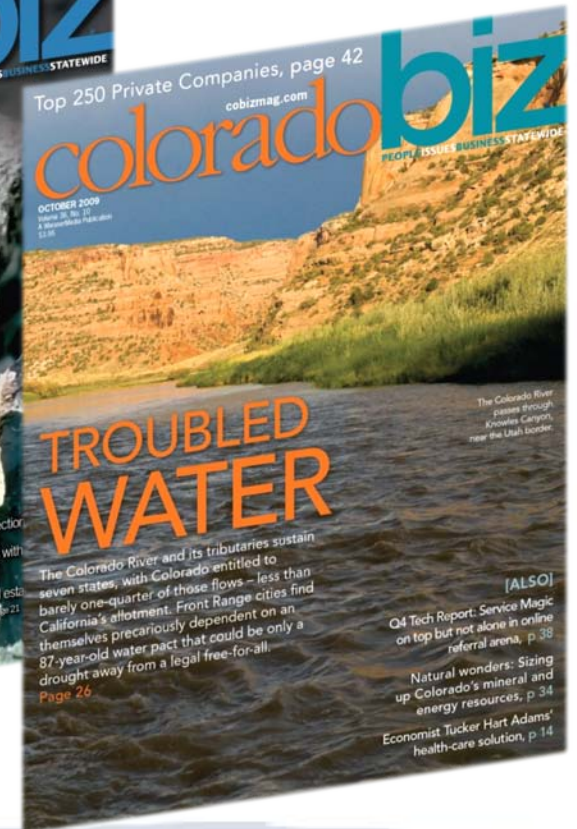
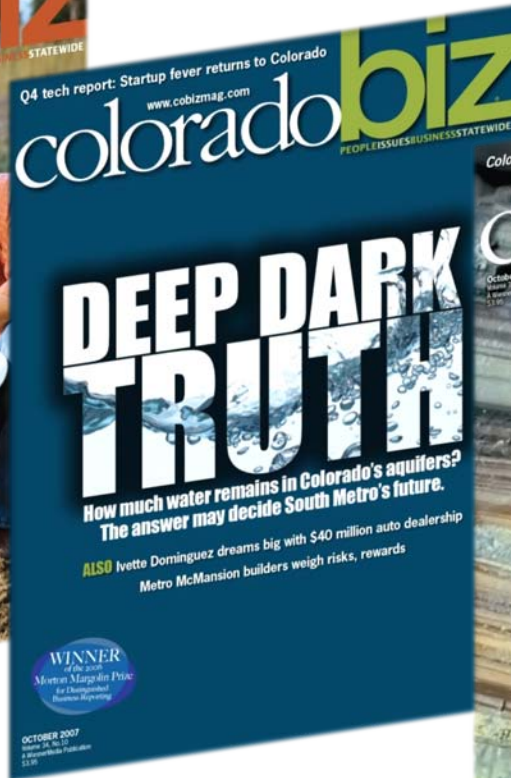
*...or: how I learned to stop worrying and
love the Allocation*

Dr. Strangelove

Or:
How
I Learned
To
Stop
Worrying
And
Love
The
Bomb



Business Perspective on Water



What Business Needs

- Certainty- of supply and costs
- Predictability- that processes and policy framework will have predictable, positive outcomes
- Manageability- change will fall within acceptable, manageable limits- that 'crisis' are sufficiently manage out of the proceedings.

Uncertainty is arguably the rule

Supply Uncertainty

- Data arrives to quantify Colorado's supply "gap"
 - ✓ CWCD: Statewide Water Supply Initiative
 - ✓ Bureau of Reclamation: Colorado River Supply and Demand Study
- What's the 'window' for action? HIGHLY uncertain
 - ✓ Some view gap materializing well before 2030
 - ✓ Many others simply aren't sure
- Upside: We know how much water is in the Colorado River and its importance- 2 or 3 Coloradan's rely on CRW

Expense Uncertainty

- Price of water forecast to rise
 - ✓ *Circle of Blue*, global water information resource, reports an 18 percent rise in 30 major U.S. cities since 2010- and a 7 percent increase last year alone
 - “The amount that Americans pay for water is rising faster than U.S. inflation and faster than the amount paid to any other utility service.”
- Opportunity cost of water disruptions
 - ✓ Operational value of water- impact of unforeseen disruptions
 - Newmont, Coca-Cola
 - ✓ Douglas County: Sterling Ranch, Canyons,

Process & Policies: Uncertain Outcomes

- Governance/Necessary Powers

- ✓ Local control: does it provide a sufficient policy-making framework to plan regionally?
- ✓ Is a statewide plan possible? Is it possible to develop cohesive policies without a plan? Non-binding “informational” role is the rule
- ✓ Prior appropriation- relevant in the new era?
- ✓ Public Trust Initiatives – is change inevitable?
- ✓ Who speaks for Colorado across the Basin?
 - “The state lacks a water plan and unlike other states, has no way to centrally plan projects or allocate water”

More Uncertain Outcomes

- Funding
 - ✓ Capital – challenge to raise \$
 - ✓ Public-private partnership, other alternatives lack support - are they appropriate means of funding water projects?
 - ✓ Diminishing revenue streams for providers (Vegas)
- Lack of consensus among CO stakeholders – ‘global agreement notwithstanding
- Political Will
 - ✓ Will we act if presented clear options?

Uncertain Outcomes

- Political Will

“I’m left with the feeling that other states have the courage to embark on water projects. We don’t have that.”

Mike Gibson, president of Colorado Water Congress and manager of the San Luis Valley Conservancy District.

The Pueblo Chieftain

- Projects ARE being approved throughout the Basin
 - Utah, NV, NM

Unresolved: Strategy

- Should Colorado pursue it's remaining Colorado River Compact allocation?
 - ✓ Data suggests significant allocation
 - ✓ Colorado and Upper Basin have never fully developed their entitlements
 - ✓ Basin states are active – is Colorado?
 - ✓ How serious is the curtailment threat?
 - ✓ Issue of the decade for water and business
 - ✓ Who's today's Delph Carpenter?

Colorado River Compact Allocation – issue challenging current water management model

- Overview:
 - ✓ Compact negotiators assumed 16+ MAF
 - ✓ Delph Carpenter's master-stroke - ½ to Upper Basin
 - ✓ 51% of Upper Basin share to CO
- Decades of dam building to implement Compact
 - ✓ Powell, Mead, Navajo, Flaming Gorge, etc.
 - ✓ Water as engineering challenge throughout the 20th century
 - ✓ 65 MAF
 - ✓ Today, realization the Compact was negotiated in a wet period:

End of the day – Colorado's allocation is 3 MAF

- “...we have a hydrologic determination that has basically set the boundaries of what the Upper Basin states can expect under the Colorado River Compact. So it is not the 7.5 million [acre-feet] that was projected in 1922. It is somewhere closer to the 6 million acre- feet. So that hydrologic determination... **The states understand and are planning to that level.** And we'll be supportive of their planning efforts and their evaluations.

Michael L. Connor, Commissioner of the U.S. Bureau of Reclamation by the United States Senate on May 21, 2009. (Fall 2010 River Report)

- Colorado's NOT planning to that level; threat of curtailment

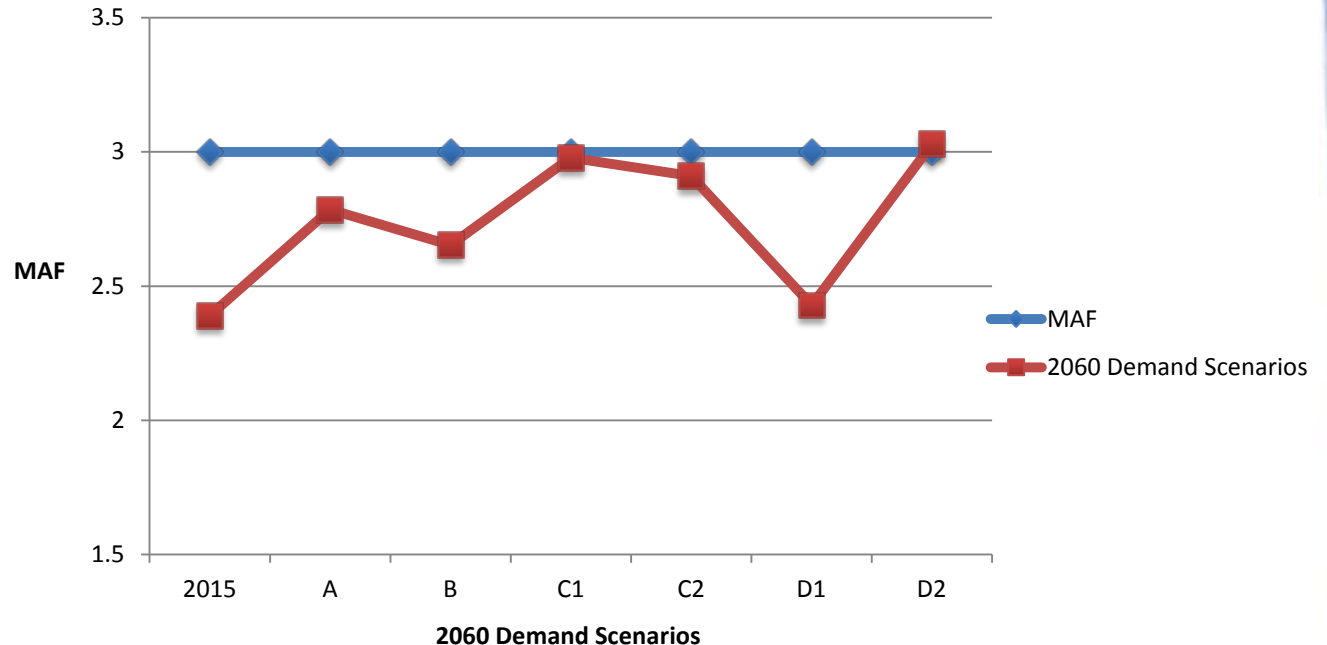
How real is the threat? How much Colorado use?

Colorado Allocation: 3.0 MAF

Allocation: 3 MAF

Today – close to 2
MAF

2.3 MAF by 2015



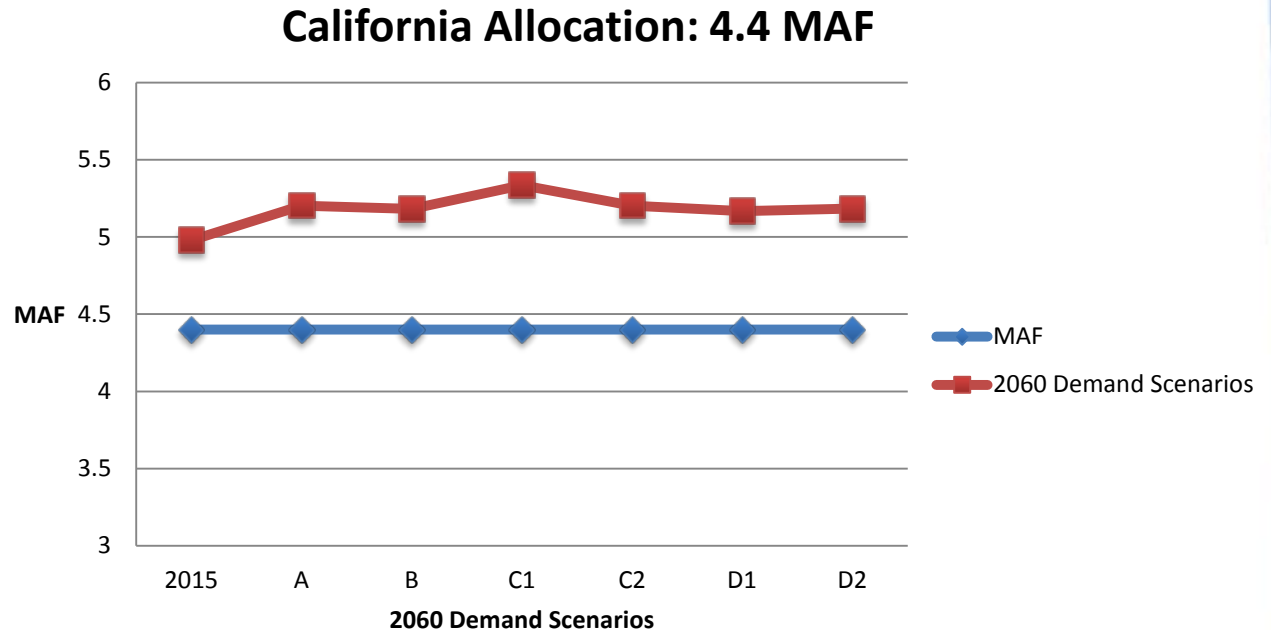
Forecast demand in 2060 @ Compact entitlement

Source: Bureau of Reclamation, Colorado River Supply & Demand Study, Memo D

Contrast Lower Basin (forecast demand)

Contrast California
limited 4.4 MAF,
1963 AZ v. CA

Today: 5.0+



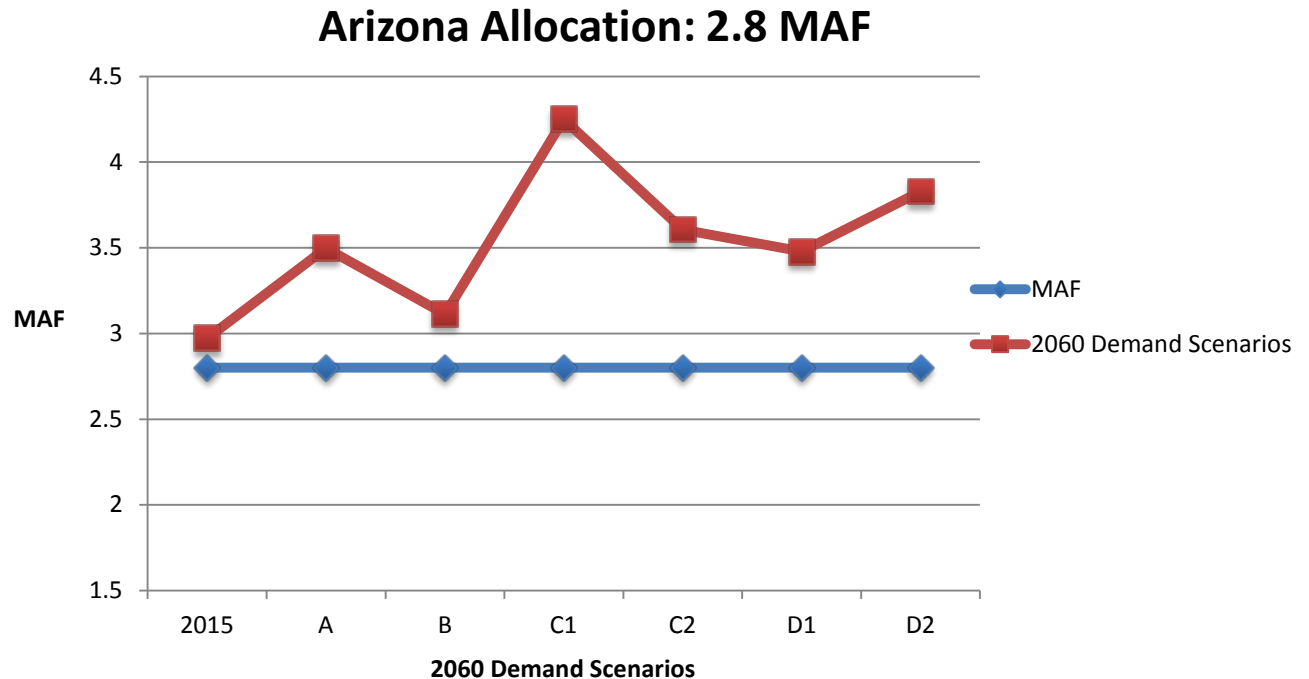
Forecast demand 2060 considerably higher than entitlement

Source: Bureau of Reclamation, Colorado River Supply & Demand Study, Memo D

How much will AZ use? (forecast demand)

AZ – limited to
2.8 MAF

2015: 2.9 MAF
before 2025



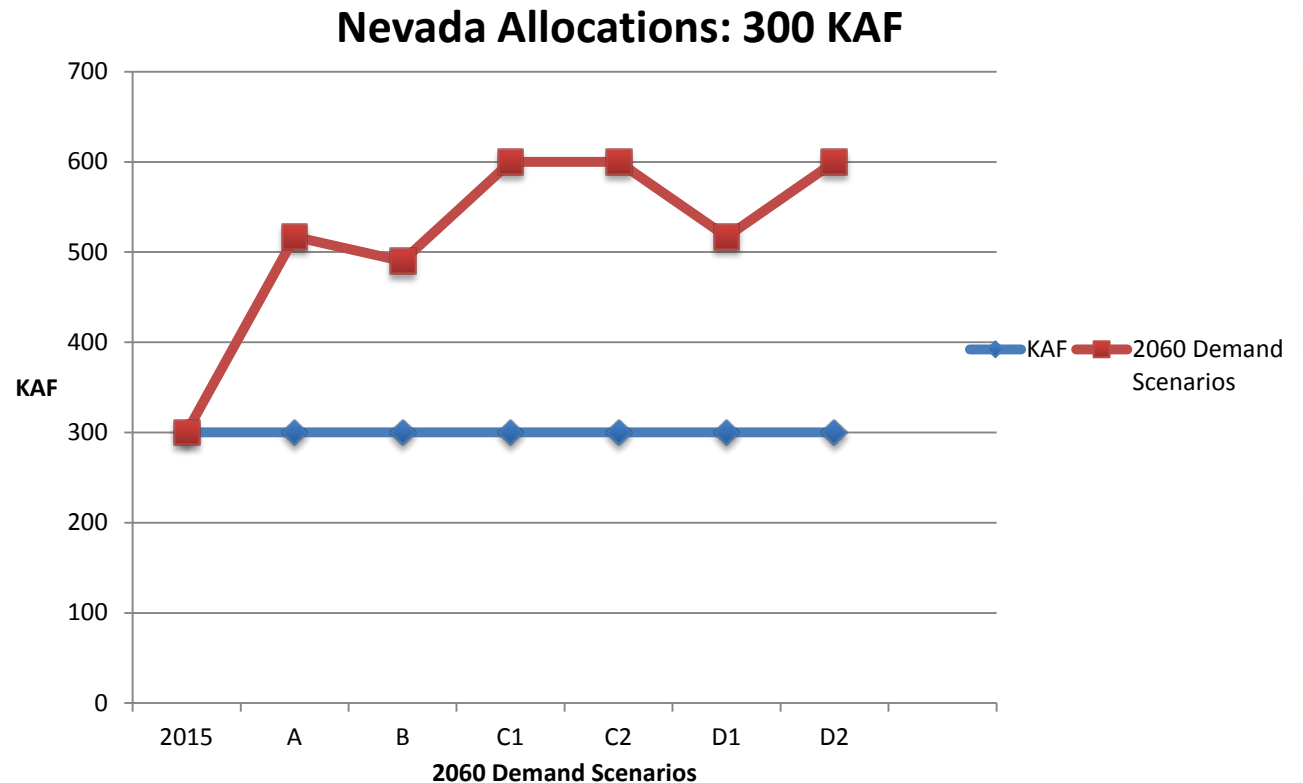
**Curtailment's inevitable entrance in AZ- 98% chance
Arizona's CAP supply will be curtailed before 2025**

Source: Bureau of Reclamation, Colorado River Supply & Demand Study, Memo D

How much will NV use? (forecast demand)

AZ – limited to 300
KAF

2015: 300



Source: Bureau of Reclamation, Colorado River Supply & Demand Study, Memo D

Should Colorado pursue it's remaining allocation?

Pros

- Substantial new source – provides one measure of certainty
- Clear entitlement
- “Necessary Powers” - District
- Demand scenarios suggest Colorado can develop within limits of Compact
- Upper Basin support
- Tactics utilize existing storage
- Ease burden on AG
- Force Lower Basin to live within its means?

Cons

- Uncertainty relating to Curtailment
 - ✓ Threat of curtailment: how real?
 - ✓ Legal guessing game: how is a curtailment enforced?
- Who loses in new supply regime?
- May deepen enmity between CO stakeholders
- Further diminishment from climate change may increase curtailment %

Colorado's Uncertain Outlook on Curtailment

“The chance of a curtailment in the next decade or two is extremely remote. In the last 10 years, we’ve delivered more than the 75 MAF at Lee Ferry...Difficult legal issues will have to be resolved before a curtailment could ever occur.”

Eric Kuhn, 2009, CRWCD

“Nobody knows for sure where we cross the line of developing too much water and forcing a curtailment on the Colorado River system that nobody wants, no matter which side of the Continental Divide.”

Jim Pokrandt, CRWCD

Love the Allocation

- Business will require decisive action:
 - ✓ Colorado – a headwater state – must develop its allocation – pursuant to a statewide plan?
 - Unpersuasive arguments against – for decades Lower Basin has gained economically from Upper Basin surplus
- Follow-lead of other Basin states
 - California's managing the River in reverse – **we've not yet decided to pursue our allocation**: QSA – managing back to 4.4
 - NM's developed full allocation – and is managing accordingly
 - Utah acting on the assumption it's entitled to more water
- Protect our economic future: who's responsibility?

Thank You!

Planetprofitreport.com

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