The Colorado River Basin Can’t Afford to Lose Ag

Growing the River: Is it all about ag?
The Colorado River District’s Annual Water Seminar
September 18, 2014
Grand Junction, CO

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Addressing the Deficit

- Basin Study Next Steps Process
- System Conservation Program
- Colorado Water Plan
The Colorado River Basin can’t afford to leave farmers out to dry

By AARON CITRON | BIO | Published: JULY 24, 2014

On Colorado River Day, it’s worth considering how we can write the next chapter in the water story of the American West.

With the recent news that Lake Mead is at its lowest level in history, it’s impossible to ignore the trajectory of America’s hardest-working river. In the Colorado River Basin, we are already using more water annually than is being supplied by snowpack and other precipitation. The Bureau of Reclamation and others predict that this gap in water supply and demand will increase to nearly 4 million acre-feet by 2060, with significant shortages possible as early as 2017.

It has become clear that, over time, our water uses are going to have to change. In thinking about where – in what sectors – this change should take place, we must also consider the environmental, cultural and economic services that each sector provides.

“Buy and dry” is no silver bullet

In the discussions about how to deal with the growing gap between
We’re all in this Together

THE OFFICIAL SPRINKLER OF SUMMER 2013.
Efficiency v. Conservation

The Multiple Benefits of Water Efficiency

LESS EFFICIENT WATER USE

- 100 units
- Water Withdrawals: 80 UNITS
- Non-beneficial Losses: 4 UNITS
- 70% on-farm efficiency: Consumes 56 units
- Return Flows: 20 UNITS
- 40 units

MORE EFFICIENT WATER USE

- 100 units
- Water Withdrawals: 62 UNITS
- Non-beneficial Losses: 1 UNIT
- 90% on-farm efficiency: Consumes 56 units
- Return Flows: 5 UNITS
- 43 units

BENEFITS OF EFFICIENCY INCLUDE:

- Maintain agricultural production
- Reduced non-beneficial consumptive losses, creating new supply
- Less polluted runoff into rivers, streams, and groundwater aquifers
- More water to support in-stream flows
- Less energy for pumping
- Reduce or eliminate need for expensive infrastructure
- Less vulnerability to drought

*Numbers in this figure are for illustrative purposes. Actual quantities would depend on site-specific conditions.*

PACIFIC INSTITUTE

www.pacinst.org
Can Efficiency help improve resiliency?

Colorado Statewide High/Low Snowpack Summary
Based on Provisional SNOTEL data as of Sep 11, 2014

- Current as Pct of Normal: 0%
- Current as Pct of Avg: 0%
- Current as Pct of Last Year: N/A
- Current as Pct of Peak: 0%
- Normal as Pct of Peak: 0%
- Current Peak as Pct of Normal Peak: 115%
- Current Peak Date: Apr 08
- Normal Peak Date: Apr 09
- Current Meltout Date: Jun 30
Change in Natural Flow under Downscaled Climate Projected Scenario

Change in Period Mean Annual Flows Compared to 1950-1999 Period Mean (%)

Natural Flow Station Number

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

-30% -20% -10% 0% 10% 20% 30%

2011-2040 2041-2070 2066-2095 ▲ 2011-2060
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- 38 units
- 43 units

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Determinants of Producers’ Ability to Pay for Irrigation System Capital Improvements

Financial Analysis of Capital Improvements to Irrigation Infrastructure – Colorado’s Western Slope; WestWater Research; August 14, 2014
Financial Benefits of Efficiency?

Ditch Improvements

Costs and benefits vary significantly between projects:

<table>
<thead>
<tr>
<th>Project</th>
<th>Length</th>
<th>Cost per Mile</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditch Lining</td>
<td>0.66 miles</td>
<td>$833,000</td>
<td>Deliver 30% more water</td>
</tr>
<tr>
<td>Ditch Piping</td>
<td>1.5 miles</td>
<td>$166,000</td>
<td>Dramatic reduction in water loss</td>
</tr>
<tr>
<td>Ditch Piping</td>
<td>3.8 miles</td>
<td>$157,000</td>
<td>Increased water delivery</td>
</tr>
<tr>
<td>Ditch and lateral piping</td>
<td>2.65 miles</td>
<td>$253,000</td>
<td>Deliver 50% more water</td>
</tr>
<tr>
<td>New Pipe installation</td>
<td>3.2 miles</td>
<td>$70,000</td>
<td>New underground delivery pipes</td>
</tr>
</tbody>
</table>

Costs are transparent

Costs vary due to:
- Terrain
- Materials
- Timing
- Project specifics

Benefits can be more difficult to estimate.
Recreation Economy

- $26 Billion
- ¼ Million Jobs
Beyond Filling the Gap: We must consider combination of conservation and efficiency to address Colorado’s water needs.