Phase II: Implementing the Colorado Water Plan
Using ATMs Successfully
GFWUA Conserved Consumptive Use Pilot Project

Mark Harris
General Manager
Grand Valley Water Users Association
Introduction to the GVWUA

Grand Valley Water Users Association manages the water diversion for GVWUA, OMID, PID, MCID, and the Grand Valley Power Plant

- GVWUA has 1,700 accounts; thousands of customers
- 23,500 irrigated acres
- Other GVP approximately 15,000A
Quick synopsis: what was the GVWUA ATM?

2,200 acres rotationally fallowed over 2 years.
21 farmers
$1.9 million total budget
6,000 ac-ft conserved
Our Farmers, like all farmers, want to grow stuff!!

We are not anxiously awaiting Demand Management, the further use of ATMs, or to implement any other conservation practice. The GVWUA is not supporting or opposing any particular solution to DCP or increased pressure on Colorado River water supplies...

However, we believe that long-term

- Climate change and volatile hydrology
- Population growth and political pressure
- Increased environmental/recreational expectations
- Renegotiation of Basin Wide Water Policies by 2026

Will continue to put pressure on ag water regardless of the outcome of the current DCP/DM investigations. Finding appropriate ways to survive those pressures is what the GVWUA is trying to do. And those solutions have to work for ag first and foremost. Period!
Why is the GVWUA participating?

Protection

• Against risk associated with drought, climate change and population pressure

• Against the unknown role of the Dept. of Interior in the upper basin during severe drought. The GVP is a Reclamation project.

• Against poor planning by others
Why is the GVWUA participating?

**Benefit**
- Infrastructure investment through potential revenue stream
- Prepare for potentially tough negotiations ahead
- Potential mechanism to help sustain profitable agriculture
Why is the GVWUA participating?

A seat at the table for western slope agriculture
- Avoid unintended consequences of decisions made by others
- Agriculture must serve a leadership role in drought resiliency
- Protect the interests of our neighborhoods and communities
Upper Basin Drought Contingency Planning was formalized after our Project began...

Three basic elements identified in Upper Basin drought contingency:

1. **Reservoir operations**... *Maybe we can move enough water into Powell to avoid the worst case scenario?*

2. **System augmentation**... *Maybe we can make it snow more?*

3. **Demand management**... *If the first two aren’t enough, someone has to use less water.*

Demand management is where GVWUA sees risk, and where GVWUA must find opportunity.
Demand Management has been identified as critical to an UB Drought Contingency Plan.

*If we are not thinking about it ... we will be the only ones in the Basin who are not*

Colorado Ag Water... including ours...is in the bull’s eye!
Conserved Consumptive Use Pilot Projects

Objectives:
• Identify and explore mechanisms to address water supply shortages that do not require separation of water from the land
  – that support agriculture
  – that are manageable and beneficial to the GVWUA and its members
  – are palatable to the rural community
  – prepare us for potential actions or negotiations required in an actual crisis
  – have possible beneficiaries beyond the GVWUA
  – have no or limited unintended consequences.
Conserved Consumptive Use Pilot Projects

Goals:

– Gauge farmer interest
– Determine scalability
– Mitigate financial cost and risk to the GVWUA
– Continued compliance with existing GVWUA contracts
– Explore potential benefit to the GVWUA
– Generate questions and concerns
– Execute a pilot program with a clear stopping place
2017 CCUPP by the numbers

4 Program Activities

<table>
<thead>
<tr>
<th>Program Activity</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF/7 months</td>
<td>No CU throughout Irrigation Season</td>
</tr>
<tr>
<td>WW/ 6 months</td>
<td>No CU until October 1</td>
</tr>
<tr>
<td>SS/ 5 months</td>
<td>No CU until September 1</td>
</tr>
<tr>
<td>AA/ 4 months</td>
<td>No CU until August 1</td>
</tr>
</tbody>
</table>

- Expressed desire by GVVWUA board for flexibility
- Using demand management as a crop rotation and an agronomic tool
- Limited potential CU in WW, SS, AA allowing for less uncertainty of CCU
- Flexibility without requiring technical monitoring of individual fields with innumerable variables
- Executable in the existing time frame
2017 CCUPP by the numbers

10 Farmer Cooperators

- Paid for participation in the program
- Limited to those Farm Operators actively farming 120+ acres
  - Searching for scalability
  - Geographic distribution
  - Agronomic diversity
- Minimum 60 acres, maximum 240 acres; not to exceed 50% of 2016 farm acres controlled for 3yrs
- Chosen by lottery – 30 contacts; 13 potential; 10 selected
2017 CCUPP by the numbers

$1,039,615 Total Budget

$725,473 Cooperator payments

$145,095 Infrastructure fund

$169,047 Foregone Revenue and Program Administration
2018 CCUPP, a second year

Goals:

– Expand the program to smaller operations
– Allow farmers to utilize water savings as a crop rotation
– Continue to learn and build on the knowledge gained
– Continue to be a part of the conversation around drought contingency planning
3 Program Activities

<table>
<thead>
<tr>
<th>Program Activity</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF/7 months</td>
<td>No CU throughout Irrigation Season</td>
</tr>
<tr>
<td>WW/ 6 months</td>
<td>No CU until October 1</td>
</tr>
<tr>
<td>SS/ 5 months</td>
<td>No CU until September 1</td>
</tr>
</tbody>
</table>

- Expressed desire by GVWUA board for flexibility
- Using demand management as a crop rotation and an agronomic tool
- Limited potential CU in WW, SS allowing for less uncertainty of CCU
- Flexibility without requiring technical monitoring of individual fields with innumerable variables
- Executable in the existing time frame
2018 CCUPP by the numbers

16 Farmer Cooperators

- Paid for participation in the program
- Limited only to farmers with 20+ acres
- Minimum 20 acres, maximum 240 acres;
- Limited to 240 acres over the 2 year program
2018 CCUPP by the numbers

**$875,765** Total Budget

- **$609,564** Cooperator payments
- **$144,288** Foregone Revenue and Program Administration
- **$121,913** Infrastructure fund

Grand Valley Water Users Association
## CCUPP by the numbers

<table>
<thead>
<tr>
<th>Category</th>
<th>2017 CCUPP</th>
<th>2018 CCUPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperators</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Fields</td>
<td>43</td>
<td>51</td>
</tr>
<tr>
<td>Total acres</td>
<td>1252</td>
<td>1069</td>
</tr>
<tr>
<td>Avg Field size</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>Conservation</td>
<td>3200 ac-ft</td>
<td>2800 ac-ft</td>
</tr>
<tr>
<td>Budget</td>
<td>$1M</td>
<td>$875K</td>
</tr>
</tbody>
</table>
Combined benefits to the Association

<table>
<thead>
<tr>
<th></th>
<th>Foregone Revenue</th>
<th>Administration</th>
<th>Profit (Infrastructure Fund)</th>
<th>Farm Profitability</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$40,070</td>
<td>$128,977</td>
<td>$145,095</td>
<td>$725,473</td>
</tr>
<tr>
<td>2018</td>
<td>$34,202</td>
<td>$110,086</td>
<td>$121,913</td>
<td>$609,564</td>
</tr>
<tr>
<td>Totals</td>
<td>$74,272</td>
<td>$239,063</td>
<td>$267,008</td>
<td>$1,335,038</td>
</tr>
</tbody>
</table>
9 of the 21 cooperators rely on agriculture as their sole source of income. A goal of the 2017 program was to capture the feasibility of water conservation for those that make their living in agriculture.
Forage and Livestock

Do you incorporate livestock as part of your operation?
Yes = 13
No = 8

Where do you derive the largest part of your farm income?

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock</td>
<td>6</td>
</tr>
<tr>
<td>Grain</td>
<td>3</td>
</tr>
<tr>
<td>Forage</td>
<td>8</td>
</tr>
<tr>
<td>Seed Crops</td>
<td>2</td>
</tr>
<tr>
<td>Hemp</td>
<td>1</td>
</tr>
</tbody>
</table>

How would you best describe your current crop farm operations?

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain Only</td>
<td>9</td>
</tr>
<tr>
<td>Forage Only</td>
<td>9</td>
</tr>
<tr>
<td>Grain and Forage</td>
<td>2</td>
</tr>
<tr>
<td>Specialty</td>
<td>1</td>
</tr>
</tbody>
</table>
Where did the payments go?

All cooperators responded that they utilized the funds within the agricultural operation. The use of funds for operating capital and debt service suggests that the conservation program fit within the existing business models of the farming operations.
How would you best describe the overall financial impact of the CCUPP on your operation?

The responses above suggest a better financial impact than interpreted from the comments received. Some examples:

"Last year, my traditional rotation would have been better"

"Any other year it would have been a benefit" (referring to high price of hay in 2018).

"Could have been better"

"Wasn’t a windfall, but happy with it"

"Advantages disappear without a hay crop, screws everything up because it is a complicated operation"
Transaction costs to participant?

How would you best describe your costs associated with fallow management?

- < $50/AC: 1 participant
- $50-$100/AC: 13 participants
- $100-$150/AC: 4 participants
- > $150/AC: 3 participants

How would you best describe your fallow management strategy?

- Chemical Fallow: 3 participants
- Mechanical Fallow (Tillage): 3 participants
- Chemical and Mechanical: 14 participants
- Other: 1 participant
Did you experience any issues irrigating participating fields after the fallow period was over?

Yes = 8
No = 9
NA = 4 (Cooperators had not received 2019 irrigation water yet for FF fields)

The cooperators that experienced issues irrigating suggested a common theme. The first irrigation after the fallow period was difficult. A significant soil moisture deficit existed, and the soil profile required significant time to fill. Additionally, certain soil types would not “soak”, meaning that the lateral movement of water into the upper portion of the soil profile and at the soil surface was slower than normal.

93 of 94 fields in the pilot projects were furrow irrigated.
Did the program “fit”?

The above suggests that the pilot project fit relatively well within the existing crop rotations of the cooperators, which was a project goal. Most cooperators simply utilized the conservation project as an intermediary step within their existing rotation.
Moving Forward, are you OPPOSED to ANY voluntary, temporary and compensated reduction in agricultural water use within the Grand Valley that supports avoidance of compact compliance issues?

Yes = 0
No = 21

The above responses suggest that cooperators understand the role of GVWUA DCP and DM activities to date and support the reduction of risk within the basin on a temporary, voluntary and compensated basis. Some comments from cooperators:

“If this is a necessary evil, if this is the only way to avoid a compact call, I am not opposed”
One cooperator expressed concern: “Give them an inch, they’ll take a mile”
“Not really opposed, neighbors are saying “this is a risky game””
“Do it again” referring to the CCUPP
“Keep it voluntary” and “Don’t jeopardize the water right”
“Yes, for compact, no for any transfer to East Slope”
“Not opposed at all”
“Good deal if it helps us keep our water”
“Not opposed, but program must go through the GVWUA”
“I’d do it again, can’t find labor”
The purpose matters

Moving forward, are you opposed to ANY voluntary, temporary, compensated reduction in agricultural water use within the Grand Valley for other purposes?

Yes = 8
No = 11

The above responses suggest that the purpose for the conservation activities is important to some.

Some comments from cooperators on both sides of the question:

“I’m in farming as a business and the conservation program made money”
“I’m not OK with a program for endangered fish only”
“I don’t want to sell water, I want to make sure this is temporary”
“I don’t think I am opposed to other purposes, this was a good way for me to catch up”
“Would depend on the program and purpose, I would need confidence that the water right is protected”
“I would need to know the purpose”
“It would depend on the reason”
“Opposed if it is not GVWUA leading the effort”
“depends on the purpose, need water rights protection”
“If it’s going to California it is irritating, they should learn to live within their means”
“depends on what it would be for”
Conclusions from our CCUPP projects?

1.) **Every organization must take their own approach**
   - What we have discovered about our organization won’t necessarily apply across the board.
   - It is more complicated within organizations and farms than the community outside understands.

2.) **If we can find the benefit to agriculture, potentially we can take advantage of the scenarios we are facing.**

   *But the impacts on the farm, on the neighbors, and on the community was of great importance to the GVWUA Board and participants*

3.) **The way we executed the project is not the same way we would do this in the future...**
   - We have developed internal tools and knowledge about “growing water” that may prove to be valuable moving forward.
   - Viewing water conservation as a new crop is helpful. Can we reduce input costs? Maximize yield? Improve marketing?
4.) **Farmers within GVWUA are interested.**
   - However, if western slope agriculture is not organized the “race to the bottom” might start before we can control it.
   - Water rights must be protected, agronomic choices/flexibility must be available.
   - Farm profitability is of highest priority.

5.) **Mutual/multiple benefit must be sought**
   - Avoiding the “race to the bottom” on price will require allies.
   - We need to remain engaged with the broader community to ensure that the economic, cultural and environmental benefits of profitable agriculture are recognized.

6.) **Developing resiliency within the basin will require upper basin agricultural participation.**
   - There is no way around it. Agriculture controls sufficient water to require our input and participation in any meaningful plan for resiliency.
   - The next generation of agricultural water users need something they can work with.
Promoting Colorado Agricultural Resiliency was Worth the Time and Effort

Thank You.....