Sustainable Groundwater Management Act

Water Budgeting

Eric Averett
The Groundwater Sustainability Plan

“GSP”
Budgeting
Requires Accurate Data!

APN Based Water Budget Platform
(Landowner Access)

Open & Transparent

Water Supply
(District Info)

Water Demand
(Satellite ET)

Water Trading

Billing
Rosedale-Rio Bravo Water Storage District

**Water Budgets**

- **Project Water**
  - Surface water developed by Rosedale-Rio Bravo
  - May not be carried-forward (subject to reconciliation at end of year)

- **Native Yield**
  - Allocated share of groundwater in basin

- **Stored Water**
  - Water developed or acquired by landowner (not project water) that may be carried forward

- **Reconciliation Water**
  - Rosedale will “reconcile” each APN at the end of the year. Any Project Water not utilized will be re-allocated amongst all APN’s who’s use exceeded their initial allocation proportional to acreage.
Demand on each APN is calculated using Evapotranspiration data
- Data is collected every few (5-11) days
- Data is interpolated between images
- Calibration is critical to ensure field level accuracy
- Landowner may utilize well head metering (Appeal)
- Demand is computed over the course of the calendar year and is basis for water budget.
- January 1 – December 31 ET “demand” is debited
  From initial “deposit”
- No “Carry-Over”
- Balance is re-allocated amongst all users proportional to acreage
- Deficit is billed at replacement water rate

Actual Evapotranspiration (ETc)
- Field boundaries overlaid in GIS
- Actual ET was extracted from ET raster outputs
- Monthly outputs
- Summarized as April-October Total Actual ETc
- For three years
Landowner Dashboard - Demo User

### Annual Water Budget Overview

<table>
<thead>
<tr>
<th></th>
<th>5,070.0 ac-ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation</td>
<td></td>
</tr>
<tr>
<td>Project Water</td>
<td>5,070.0 ac-ft</td>
</tr>
<tr>
<td>Reconciliation</td>
<td>0.0 ac-ft</td>
</tr>
<tr>
<td>Native Yield</td>
<td>0.0 ac-ft</td>
</tr>
<tr>
<td>Stored Water</td>
<td>0.0 ac-ft</td>
</tr>
</tbody>
</table>

Your annual allocated water budget

#### Purchased

<table>
<thead>
<tr>
<th></th>
<th>300.0 ac-ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sold</td>
<td></td>
</tr>
</tbody>
</table>

Water supply you have purchased this year

#### Total Supply

<table>
<thead>
<tr>
<th></th>
<th>4,770.0 ac-ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation + Purchased - Sold</td>
<td></td>
</tr>
</tbody>
</table>

Water supply you have sold this year

* denotes a pending transaction

### Trade Activity

<table>
<thead>
<tr>
<th>Trade</th>
<th>Date</th>
<th>Status</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-0046</td>
<td>10/25</td>
<td>Awaiting Registration</td>
<td>Selling 300 ac-ft</td>
<td>$75,000.00</td>
</tr>
<tr>
<td>2019-0045</td>
<td>10/25</td>
<td>They countered</td>
<td>Selling 300 ac-ft</td>
<td>$157,500.00</td>
</tr>
</tbody>
</table>

### Postings

<table>
<thead>
<tr>
<th>Date</th>
<th>Type</th>
<th>Status</th>
<th>Initial Quantity</th>
<th>Current Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/25</td>
<td>Offer to Sell</td>
<td>Open</td>
<td>400 ac-ft</td>
<td>400 ac-ft</td>
<td>$525.00 per ac-ft</td>
</tr>
</tbody>
</table>
CHALLENGE

• Water Budget based upon monitoring vs. “checkbook”
  • Groundwater levels are temporally and spatially disconnected from overlying use and right(s) to use.
  • Lack of.............or existence of undesirable results at a monitoring point may not indicative of “sustainability” for the GSA reporting.
    • White lands adjacent to a sustainable GSA
    • Lands within a sustainable GSA but adjacent to an area that is not sustainable
• Responsibility for Sustainability cannot go beyond a balanced checkbook