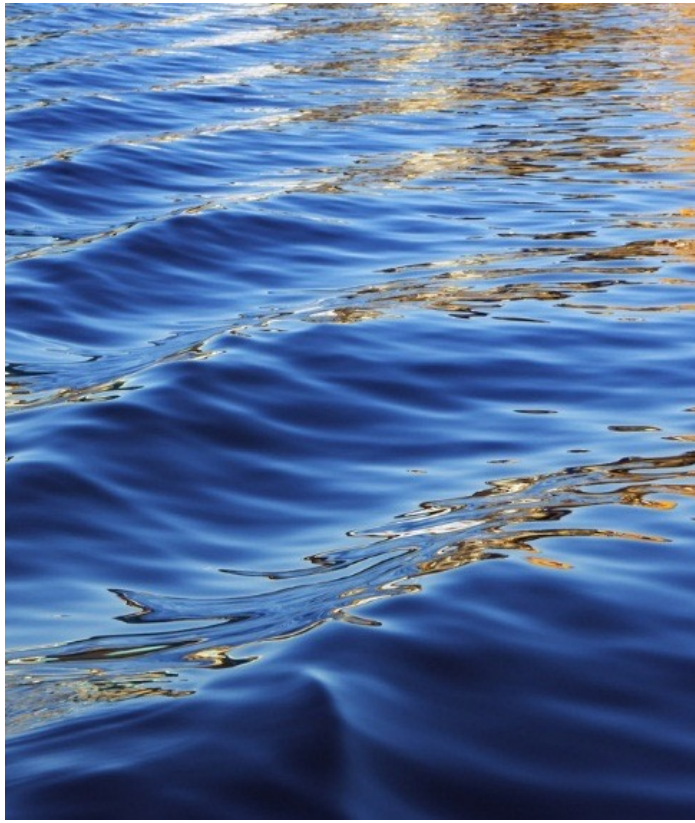
SWIG Meeting #9



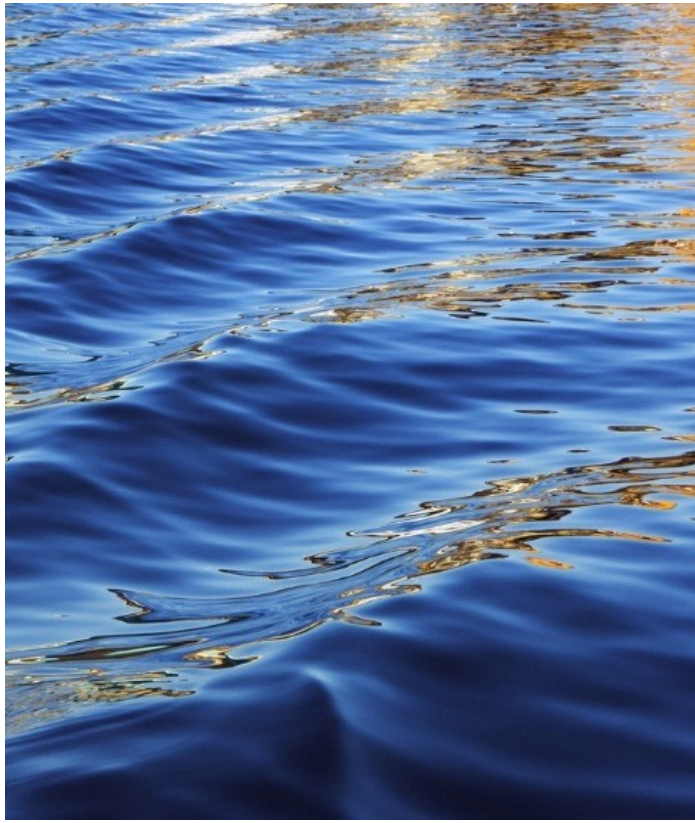
Welcome and Agenda

- **Welcome -Roll Call**
- **SWIG Accomplishments**
- **Update on Prop 1, Round 2m Grant Award, City of Salinas and M1W**
- **Deep Aquifer Study**
- **WestWater Presentation – Demand Management Strategies**
- **GSA Updates**
- **Next Steps**
- **Adjourn**

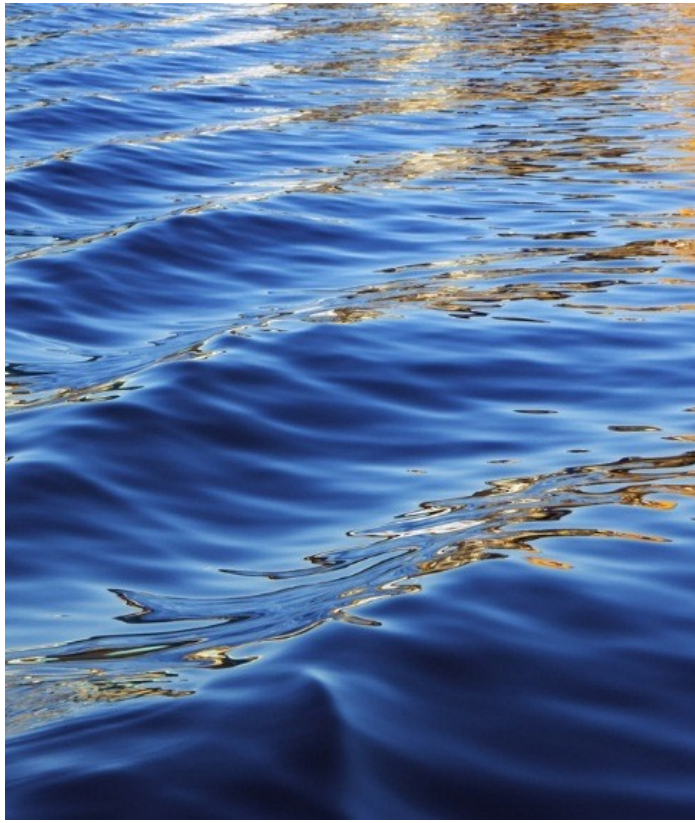
Ground Rules

- State views and ask genuine questions.
- Share all relevant information.
- Use specific examples and agree on what important words mean.
- Explain reasoning and intent.
- Focus on interests, not positions.
- Test assumptions and inferences.
- Jointly design next steps.
- Discuss undiscussable issues.

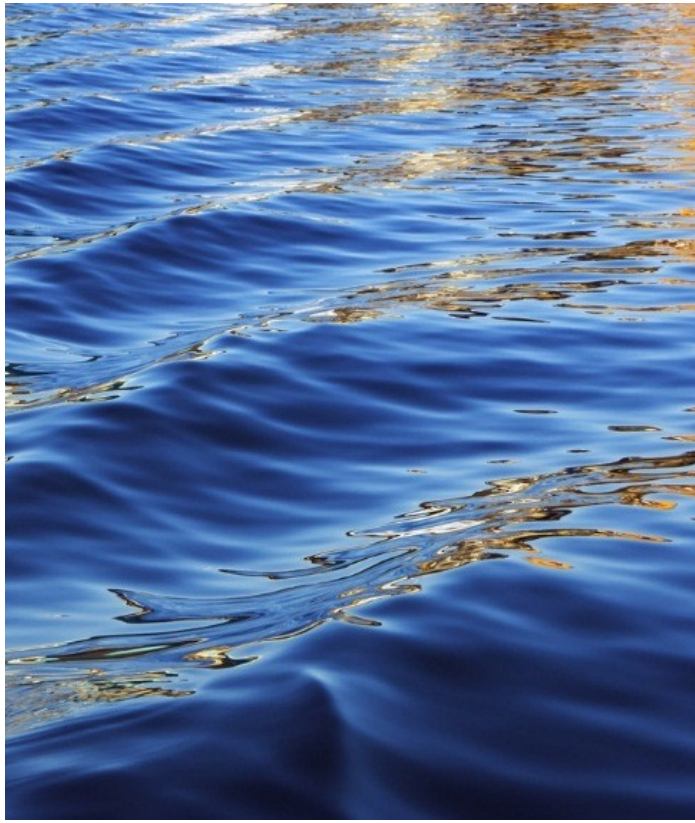
SWIG Accomplishments



Prop 1, Round 2
Grant Award,
City of Salinas and M1W



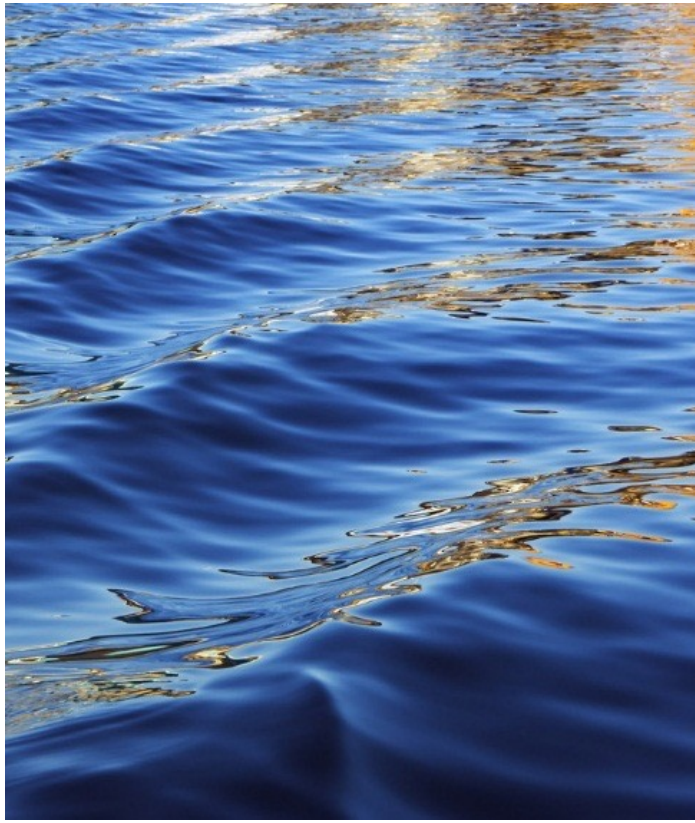
Deep Aquifer Study SVBGSA



Time to start the conversation on how to get this done!

- Meetings with Partners
- Funding – Onetime special fee
- Scope –Built from TAC Recommendations
  - RFQ – Full proposal developed after qualifications-based selection

GSA Updates



Updates

- GSA getting underway with a Strategic Planning Process
  - 3 Data Collection meetings complete
  - Looking ahead –moving from planning to implementation
  - Project Funding
  - Partnerships
  - Governance Structure

- Fee Updates Underway- Board decides
  - Regulatory fees for planning and operations
  - May include fee for Deep Aquifer Study

- Pursuit of Grants –Water Smart


FINAL
THOUGHTS

Salinas Valley Basin GSA - SWIG

Water Markets & the Water Charges Framework (WCF)

March 22, 2021

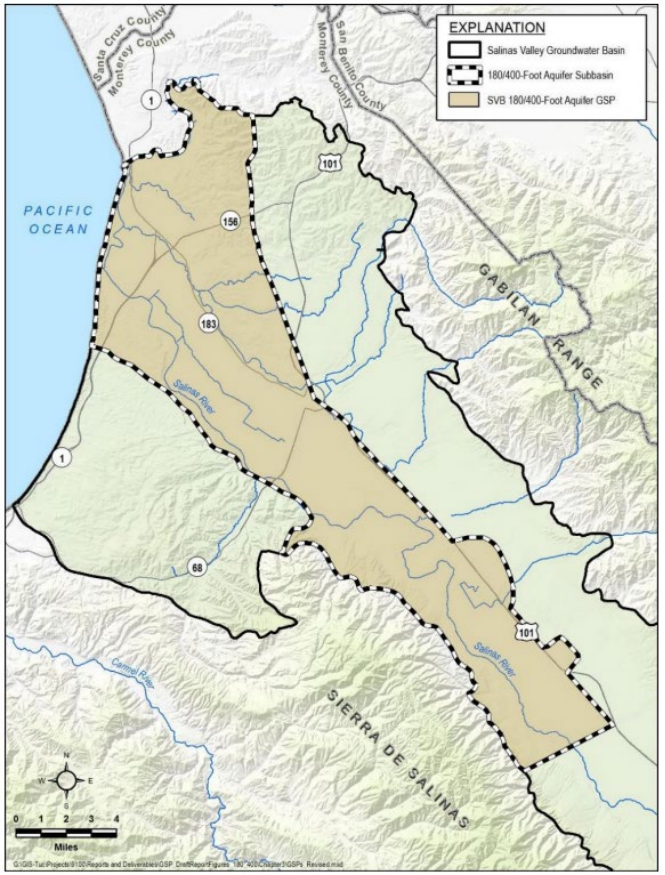
Meeting Goals

1. Review the Proposed WCF
2. Understand Potential Role for Water Markets in SGMA
3. Learn About Water Markets in Other Regions
4. Discuss WaterSMART Grant Opportunity

Water Charges Framework Review

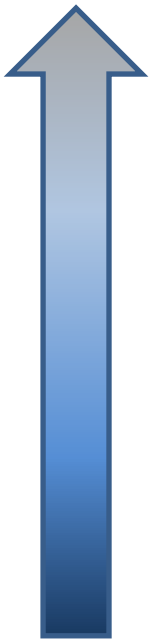
Overview: Water Charges Framework (WCF)

- SVBGSA manages 1 Critically Overdrafted Basin and 5 other priority basins.
- The 180/400 Foot Aquifer Subbasin (180/400) submitted its GSP in January 2020. GSPs for the other basins are due by January 2022.
- Having entered the implementation stage, the 180/400 must begin addressing the key issues of groundwater overdraft and seawater intrusion.
- The Water Charges Framework (WCF), which provides tools for demand management and an approach to support SGMA funding needs, was described in the 180/400 GSP.
- SVBGSA's other basins are likely to look toward the 180/400 as a guide for their own GSPs and implementation own activities.



Building a WCF

Depending on a subbasin's needs and objectives, the Water Charges Framework can be structured to incorporate multiple features that build on each other.



Water Market

Rules that enable for the transfer of allocated allowances among eligible entities.

Allowance

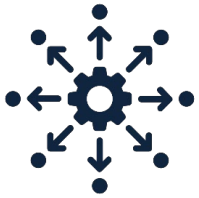
Quantified allowance of water available for use on an individual basis without incurring higher pumping fees.

Pumping Fee

Use-based fee associated with groundwater pumping that incentivizes use reduction and helps address SGMA funding needs.

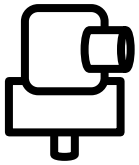
Fees, allowances, and markets could be across the Salinas Valley, specific to individual subbasins (e.g. 180/400), and/or specific to management areas.

Why Develop a WCF in the 180/400?



Improved Flexibility

Creates a fee structure and potentially tradeable asset that can mitigate local SGMA impacts and delay or reduce the need to develop other costly supply projects.



Tool for Demand Management

Facilitates improved demand management that can support accomplishing both basin-wide and locally specific goals.

Funding Source

Can provide, complement, and enable needed GSP project funding and financing sources (e.g. loans).

Certainty

Develops an established framework of long-term rules, schedule of activities, and procedures for amendment (if needed).

Role of Water Markets in SGMA

The Role and Formation of Markets

Public Policy Goal

Public policy (e.g. SGMA) can be used to develop a **framework** that **enables markets** to **emerge**, which can assist to:

• Manage Economic Impacts • Improve Flexibility • Reduce Unnecessary Costs

How Markets Form

Markets form as a result of resources being **defined** and demand existing to **transfer** that resource to **new uses**.

- **Defined** – Use/ownership terms are well understood and respected
- **Transferable** – Can be assigned from one holder to another, subject to transaction costs

Key Attributes

Effective and efficient markets exhibit the following qualities:

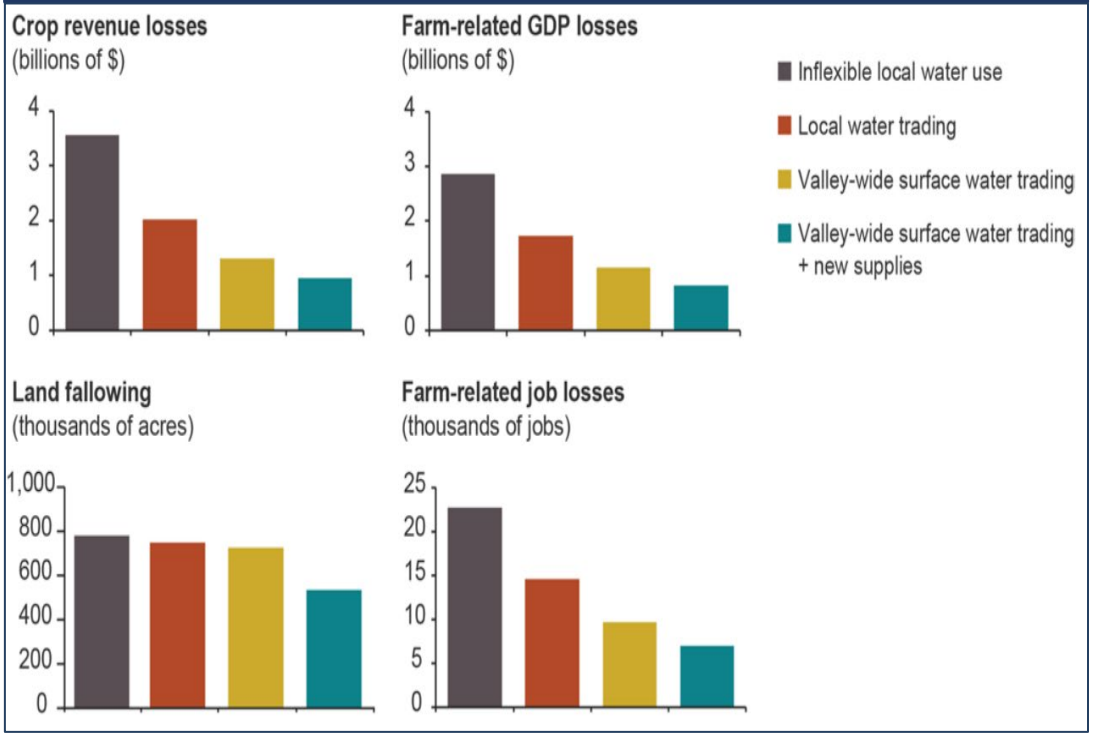
- Clear Rules & Compliance
- Similar Goods
- Low Transaction Costs
- Limited Externalities
- Transparency

SGMA Opportunities

New Tools: SGMA provides the 180/400 Foot Aquifer Subbasin with new tools to manage conditions and activities that impact groundwater sustainability.

Market Benefits: Well-designed water markets can mitigate the economic impacts of water scarcity and enable opportunities to create new value.

Estimated Economic Impact of Ending Overdraft in the San Joaquin Valley Depending on SGMA Water Market Scenarios[1]



[1] **Figure sourced and adapted from**: *A Review of Groundwater Sustainability Plans in the San Joaquin Valley*. Public Policy Institute of California (PPIC). May 2020.

Water Market Examples

Water Market Examples

Defining Transfers: Water transfers enable willing buyers and sellers to optimize the distribution of supplies in exchange for (typically) financial consideration.

Local Markets: Water markets tend to be local in nature due to conveyance limitations and policies that seek to manage against potential impacts to other local water users.

Activity: Regional differences in supply, demand, and use result in prices and transfer activity that vary widely.

Selected Local Market Profiles

Market Examples: Several distinct Western US water market regions are discussed and relevant policies summarized in the following slides:

1. **Mojave Basin, CA** (adjudicated basin groundwater market)
2. **Phoenix AMA, AZ** (groundwater market based on state law)
3. **Edwards Aquifer, TX** (groundwater market with environmental programs)
4. **Rosedale-Rio Bravo, CA** (anticipated SGMA market)

Market Profile: Mojave Basin (CA)

Overview & Background

- A legal adjudication resulted in the 1996 Physical Solution, which allocated groundwater rights, provided transfer mechanisms, and identified local rampdowns to address groundwater overdraft.

Allocation Approach

- Based on historic pumping, with the Base Annual Production Right (BAP) defined as the highest volume pumped in one year during a five-year period preceding the adjudication (1986 – 1990).

Eligible Participants

- *Initial Allocation* – Parties to the Adjudication (e.g. municipal, agricultural, environmental, industrial, and other pumpers).
- *Ownership/Transfers* – Any entity Party to Judgement (incl. new).

Water Assets & Transfer Rules

- *BAP* – Freely transferable within Subarea.
- *Free Production Allowance (FPA)* – Freely transferable within Subarea.
- *Carry-Over of FPA* – 1 year limit. Freely transferable within Subarea.

Mechanisms for Adaption

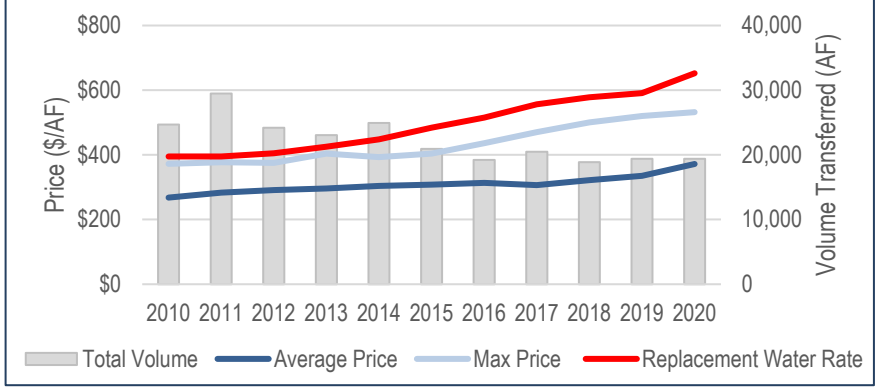
- *Rampdown* – Individual Subareas have separate rampdowns, which can be further adjusted reducing annual allocations of FPA per BAP.

Water Charges Framework

- Administrative and biological resource fees per acre-foot pumped.
- Replacement Water Assessments payable for over-production.

Mojave Adjudicated Basin Market Area

Mojave Alto Subarea Market, Temporary Transfers (2010-2020)



Market Profile: Phoenix AMA (AZ)

Overview & Background

- Arizona passed its Groundwater Management Code in 1980 to manage severe groundwater depletion and provide a means for allocating the state's groundwater resources to effectively meet future needs. The Phoenix Active Management Area (AMA) is one of five AMAs created.

Allocation Approach

- Generally, based on maximum historic use or estimated irrigated crop duty during five year period preceding inclusion into the AMA.

Eligible Participants

- *Initial Allocation* – Historical groundwater users within the AMA (e.g. municipal, agricultural, industrial, and other pumpers).
- *Ownership/Transfers* – Open to most entities, subject to transfer rules.

Water Assets & Transfer Rules

- *Irrigation Grandfathered Rights* – Not transferable separate from land.
- *Type I Non-Irrigation Right* – Not transferable separate from land.
- *Type II Non-Irrigation Right* – Transferable separate from land, only to industrial use and only as a whole unit (not divisible).
- *Service Area Rights* – Non-transferable.
- *Long-Term Storage Credits* – Developed from recharge; transferable.

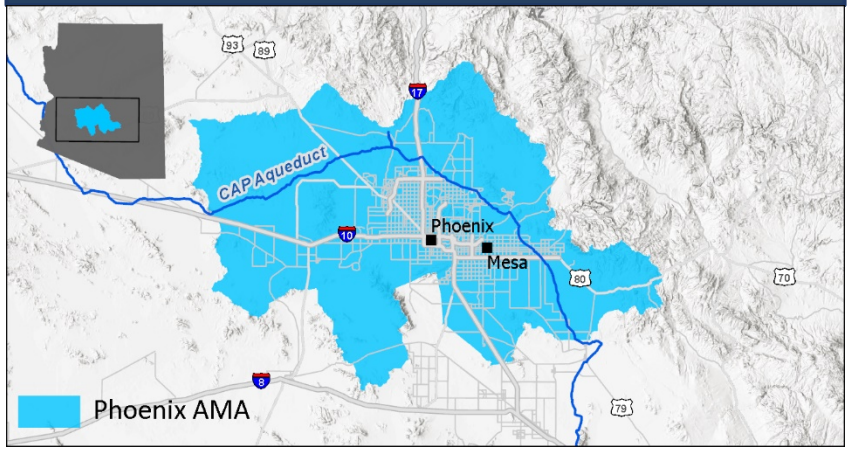
Mechanisms for Adaption

- *Conservation* – Regular five-year conservation adjustments.

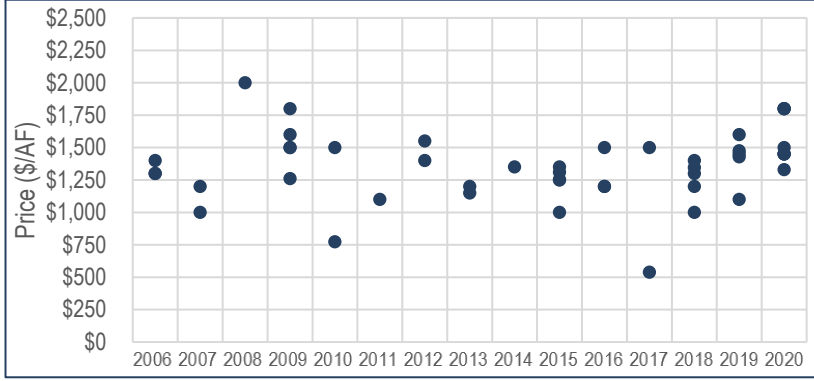
Water Charges Framework

- Minor withdrawal fee per AF of pumping.
- Overuse may result in civil and criminal penalties, cease and desist orders

Phoenix AMA Market Area



Phoenix AMA Type II Market, Permanent Transfers (2006 – 2020)



Market Profile: Edwards Aquifer (TX)

Overview & Background

- The 1993 Edwards Aquifer Authority (EAA) Act created a system of transferable groundwater rights to manage over-pumping and impacts on local habitats.

Allocation Approach

- Initially, based identified historical use during period 1972 – 1992 and specific use rates (application required); thereafter, new applications until total permitted supply reached the regional pumping cap of 572,000 AF.

Eligible Participants

- *Initial Allocation* – Historical groundwater users, then new applicants.
- *Ownership/Transfers* – Open to most entities, subject to transfer rules.

Water Assets & Transfer Rules

- *Base Irrigation Groundwater (BIG) Right* – Transferable on a permanent (with land) and lease (only for irrigation) basis; not transferable from West to East of Cibola Creek.
- *Unrestricted Irrigation Groundwater (UIG) Right* – Transferable on a permanent and lease basis; not transferable from West to East of Cibola Creek.

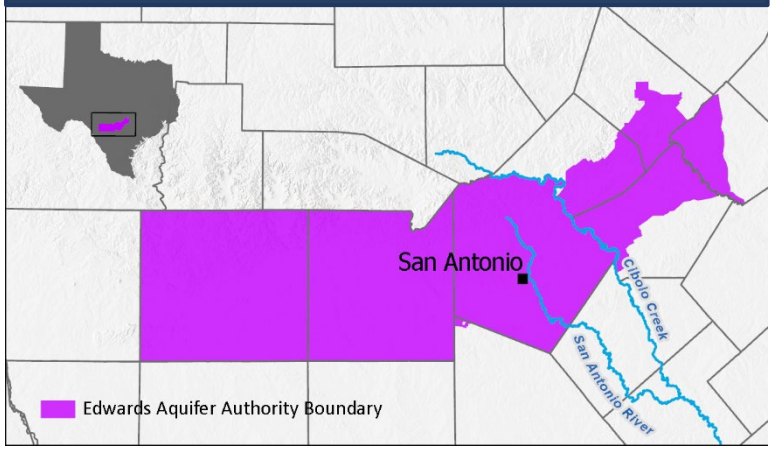
Mechanisms for Adaption

- *Pumping Reductions* – Annual withdrawal reductions may be applied to permits (up to 44%) based on triggering conditions.
- *VISPO* – The Voluntary Irrigation Suspension Program Option (VISPO) and other programs can trigger pumping forbearance among voluntary participants in exchange for payments to protect springflow.

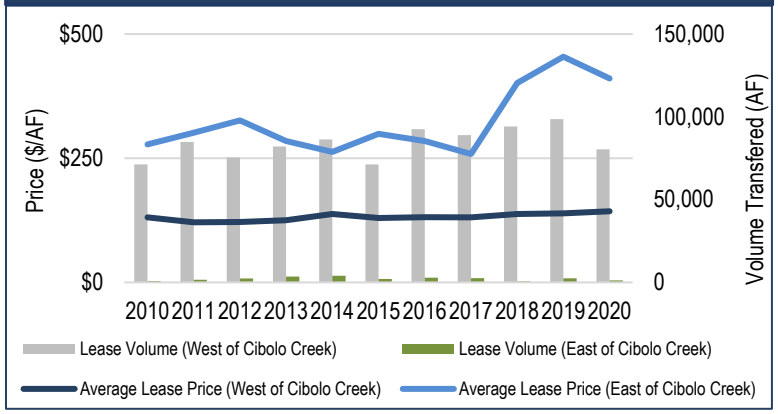
Water Charges Framework

- Well registration and annual water right permit and use fees for administration.
- Overuse fee, but continued overuse may result in court action and suspension.

Edwards Aquifer Market Area



Edwards Aquifer Market, Temporary Transfers (2010 - 2020)[1]



Market Profile: Rosedale-Rio Bravo (CA)[1]

Overview & Background

- Rosedale-Rio Bravo Water Storage District (Rosedale) developed a water accounting and trading platform in response to SGMA to increase flexibility by facilitating the movement of water between landowners.

Allocation Approach[1]

- Pro-rata allocation by acre of District supplies and Sustainable Yield.

Eligible Program Participants[1]

- *Included* – District agricultural landowners/customers.
- *Excluded* – Municipal and domestic entities.

Water Assets & Transfer Rules[1,2]

- *Transferable* – Purchased water, District-allocated water.
- *Sustainable Yield* – Not transferable (awaiting Basin-wide coordination).

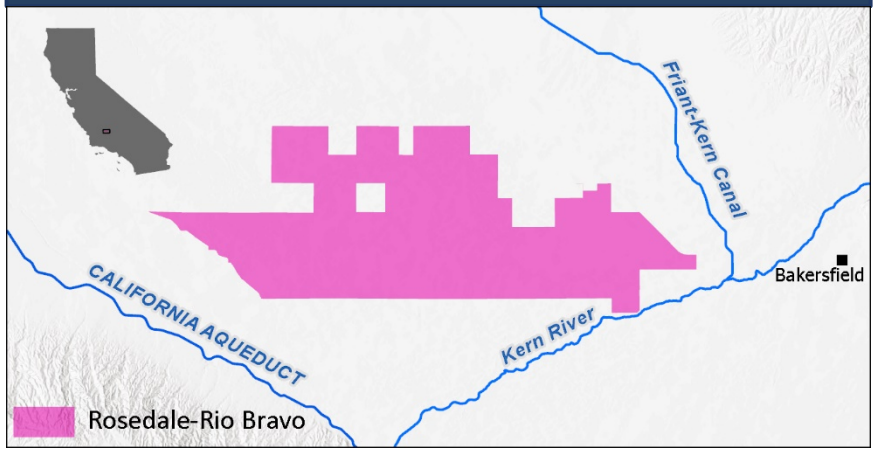
Mechanisms for Adaption[1]

- *Re-Allocation* – Unused water supplies leftover in landowners' water accounts may be re-allocated to users at the end of each year through a reconciliation process.

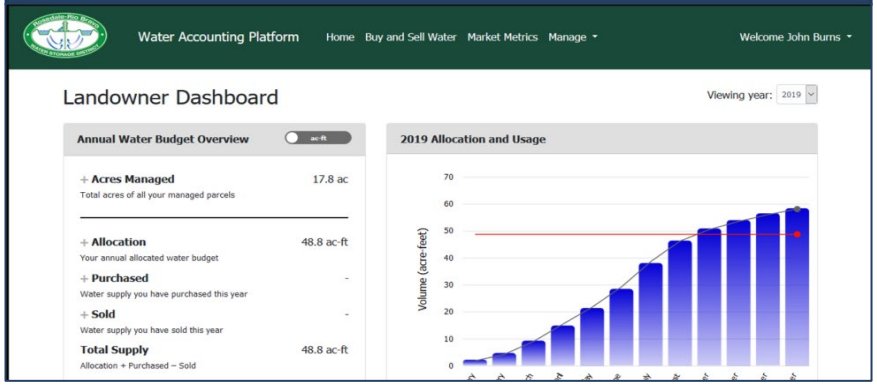
Water Charges Framework[1]

- Landowners pay assessments and water service fees from the District.
- Landowners pay over-pumping charges if they exceed their allocation.

Rosedale-Rio Bravo Market Area



Rosedale-Rio Bravo, Market Platform Design



[1]**Note:** *The program information and prospective policies described herein are not final and solely prospective in nature. Informational summaries are based on most recent discussions of potential program implementation and are entirely subject to change.*

[2]**Note:** *Full trading functionality is not anticipated until at least 2025.*

Key Takeaways & Lessons Learned

- **Water Assets Have Value:** Programs that create new assets (e.g. water allocations, credits) create new instruments of value. Increasing a water asset's transferability (e.g. marketable boundaries, separating ownership from land) and utility (e.g. not limiting it to a particular use) further increases its value potential.
- **Clarity Generates Stability**: Water market systems create a new foundation of water management infrastructure. Developing rules that are easily understood, complemented by clear definitions of assets and opportunities, is likely to generate long-term operational, groundwater management, and market stability.
- **Plan to Adapt:** Local groundwater conditions have the potential to change, both basin-wide and in smaller sub-areas. Anticipating change through properly structured mechanisms (e.g. allocation rampdowns, temporary pumping adjustments) can enable efficient adaption without requiring arduous and/or fundamental alterations to the underlying program framework.
- **Maximize Flexibility**: Rather than adopting stringent pumping caps, replacement pumping fees and financial charges can be used to incentivize reduced use. In addition, these approaches ensure pumpers can flexibly access needed water even if their base allowance has been depleted, while also funding projects and programs (e.g. land fallowing, forbearance, recycling) that ensure basin sustainability is still achieved.
- **Approaches to Mitigate Impacts**: A program's core structure may not entirely address specific localized impacts (e.g. cones of depression, subsidence), but it can facilitate or streamline their mitigation. For example, the Edwards Aquifer VISPO Program voluntarily enrollers pumpers who can be called to forego exercising their allocated groundwater rights in exchange for compensation – helping maintain springflow in critical years. Alternatively, mechanisms (e.g. permit adjustments, management areas), processes (e.g. transfer approvals), or fees (e.g. funding projects) can be implemented manage potential impacts.

WaterSMART Grant Opportunity

WaterSMART Funding Opportunity

WestWater will be assisting SVBGSA apply to the FY21 WaterSMART Water Marketing Strategy Grant Funding Opportunity for a 3-Year Study and maximum possible grant award of $400,000.

The Purpose of SVBGSA's WaterSMART grant-funded Study would be to:

- *Evaluate and refine* the functional components of a possible WCF, and
- *Engage stakeholders* through a Working Group Committee and other venues to explore how a WCF could potentially be applied in the 180/400 Foot Aquifer and other subbasins.

Primary Tasks of SVBGSA's WaterSMART grant-funded Study would be to:

- Facilitate WCF Development Workshops
- Conduct stakeholder outreach
- Analyze impacts and benefits of a WCF
- Consider inter-basin coordination
- Evaluate different policy tradeoffs
- Develop a WCF Strategy document

IMPORTANT: The Grant does not require establishing a water market, but can help fund developing strategies that may lead to one.

Since 2017, WestWater has prepared Applications and successfully received WaterSMART Water Marketing Strategy grant funding awards on behalf of five (5) separate study projects.

WaterSMART Grant Overview

Purpose: Support the development of collaborative planning efforts to develop water management programs that will proactively address water supply reliability and increase water management flexibility.

Required Project Components

- *Outreach & Partnership Building*
- *Scoping and Planning Activities*
  - May include economic analyses, supply/demand assessments, program structure and approaches research, associated hydrologic/engineering studies, support tool analysis, pilot activities, etc.
- *Marketing Strategy Document*

Grant Amount:

- *Group 1* - Up to $200,000 (two-year project)
- *Group 2* - Up to $400,000 (three-year project)

Cost Share: 50% (incl. cash, in-kind, secured non-federal grants/loans)

Total Available: $3 million, or approx. 10-12 awards

Prior SGMA-Related Awards:

- *2019 Tulare Irrigation District* (Kaweah Subbasin Water Marketing Strategy)
- *2018 McMullin Area GSA* (Groundwater Credit and Surface Water Marketing Strategy)
- *2018 Madera County* (Water Marketing Strategy Development & Pilot Program)

Letters of Support: Highly recommended

Potential Program Examples

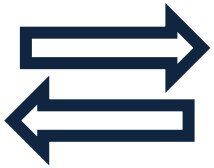
A potential WCF requires further refinement and stakeholder input before implementation can be considered. Several approaches and components that could be studied under a multi-year period with WaterSMART funding are described below:

Pumping Fee Framework

- **Description:** Tiered system of groundwater pumping allowances with associated fees used to fund local SGMA needs, projects, and management actions.

Collaborative Recharge Program

- **Description:** Program where entities contributing recharge (e.g. canal seepage, dedicated basins, ASR, effluent recharge) are compensated by other local entities pumping groundwater.



Basin Groundwater Market

- **Description:** Groundwater allocation system complemented with rules for debiting, crediting, banking, and transferring of water supplies among eligible participants.

Seawater Intrusion Forbearance Program

- **Description:** Participants voluntarily agree to forego pumping during seawater intrusion events in certain areas in exchange for payment.

Discussion