Kaweah Subbasin Water Marketing Strategy

Public Workshop No. 1
October 27, 2021

Agenda

1. Welcome and Introductions
2. Water Market Strategy Background
3. State and Federal Funding Support
4. Key Elements of Water Market
5. Case examples of Water Markets
6. How the Public Can Participate
7. California Water Commission

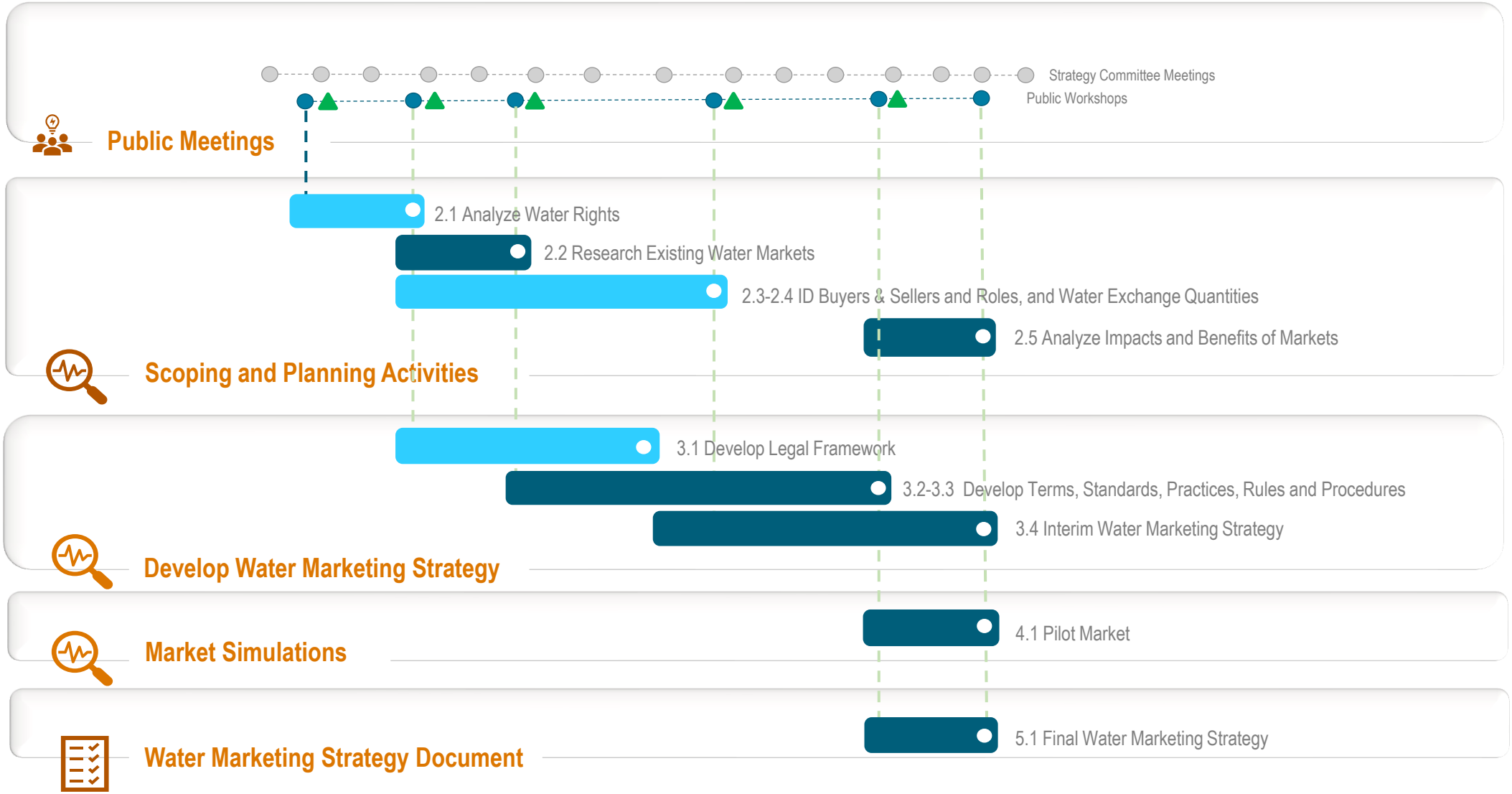
Welcome and Introductions

a. *Welcome: Strategy Committee Chair Steve Nelsen*
b. *Project Schedule*
c. *Project Organization*

Kaweah Subbasin Water Marketing Strategy Committee

Joe Cardoza	• Grater Kaweah GSA
Steve Nelson	• Mid-Kaweah GSA
Brian Watson	• East Kaweah GSA
Scott Rogers	• Tulare Irrigation District
David Cardoza	• Ag Seat – Cardoza Co.
Manuel Leon	• DAC Seat – Self-Help Ent.
Soapy Mullholand	• Environmental Seat
James Silva	• Water Seat – Various Kaweah Ditch Companies
Chuck Nichols	• Industrial Seat – Nichols Farms
Craig Wallace	• Water Seat – LSID
Matthew Watkins	• Ag Seat – Bee Sweet Citrus

Schedule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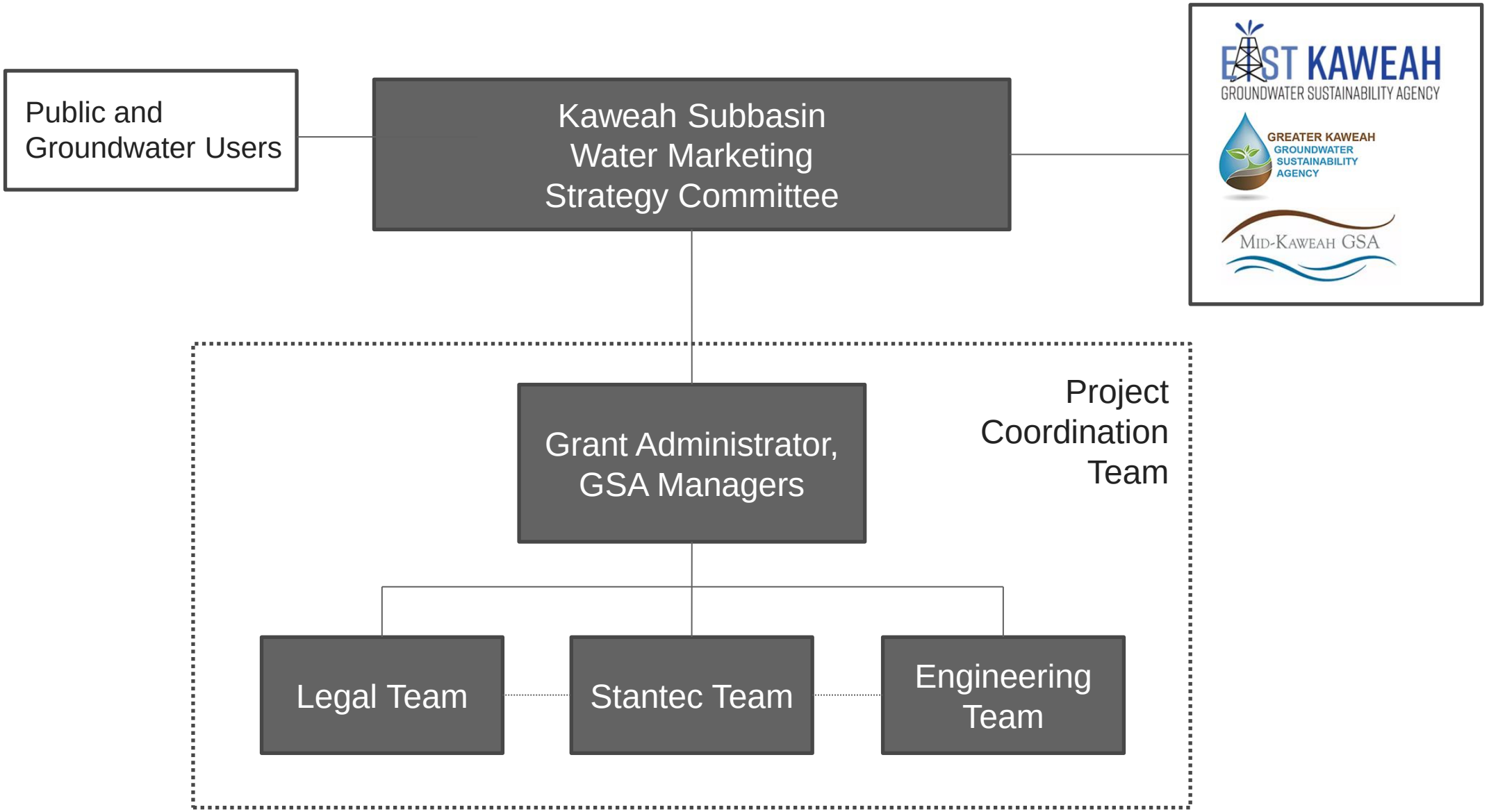
2.1 Analyze Water Rights
2.2 Research Existing Water Markets
2.3-2.4 ID Buyers & Sellers and Roles, and Water Exchange Quantities
2.5 Analyze Impacts and Benefits of Markets
Scoping and Planning Activities
3.1 Develop Legal Framework
3.2-3.3 Develop Terms, Standards, Practices, Rules and Procedures
3.4 Interim Water Marketing Strategy
Develop Water Marketing Strategy
Market Simulations
4.1 Pilot Market
Water Marketing Strategy Document
5.1 Final Water Marketing Strategy
Legend:
Stantec Team Lead
Legal/Engineering Team Lead
Office Hours

Organizational Framework



Roles and Responsibilities

Strategy Committee and Members

- Represent the perspectives of 11 constituencies
- Guide development of the water marketing strategy
- Make decisions on proposed water market parameters, rules and management

Project Coordination Team **(Grant administrator, GSA managers, Technical and Legal teams)**

- Manage activities directed by the Strategy Committee
- Prepare materials for Strategy Committee for consideration
- Facilitate coordination among technical and legal teams
- Administer consultant contracts

Stantec Team

- Prepare interim materials and final water marketing strategy document
- Provide timely information to Strategy Committee for consideration
- Support public workshops

Engineering Team **(Montgomery Associates and Provost & Prichard)**

- Prepare water allocation and water accounting framework

Legal Team

- Provide legal guidance on water supplies available for market, limitations, constraints and Strategy Committee requirements

Strategy Committee and PCT Notification

Setting:

- Strategy Committee is an ad hoc committee of the GSA boards.
- Ad hoc committee is not subject to the Brown Act

Strategy Committee Meetings

- Noticed and conducted consistent with the Brown Act guidelines to achieve transparency
- Discussion: Record and post meetings on MKGSA YouTube Channel

Project Coordination Team Meetings

- Discussion: Extent of public/stakeholder notification and desired level of public/stakeholder involvement

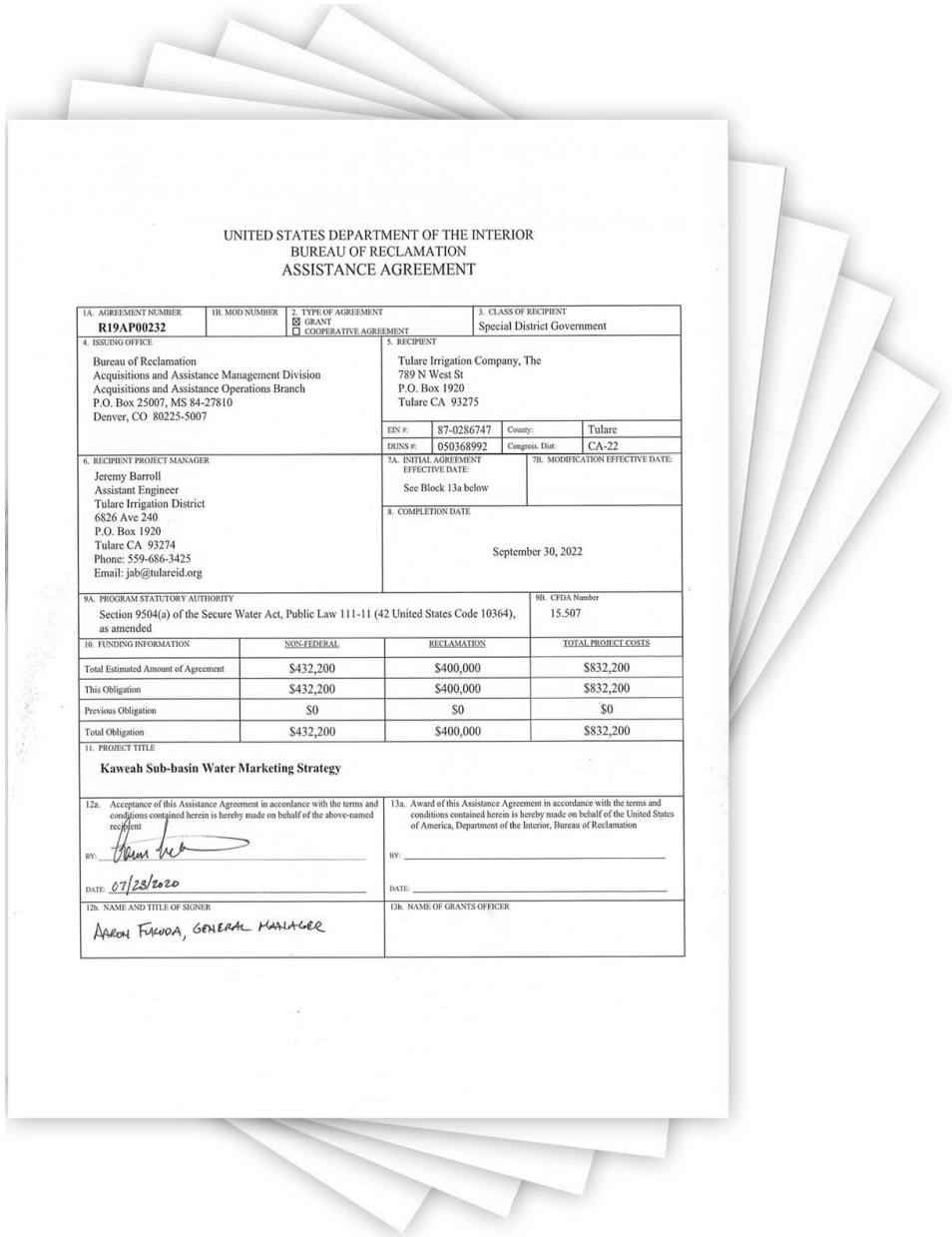
State and Federal Funding Support

a. *USBR WaterSMART Grant*
b. *DWR Facilitation Support Services Program*

WaterSMART Grant

Overview

- Financial assistance agreement between TID and the Bureau of Reclamation
- Authorized under the SECURE Water Act, Public Law 111-11
- Seeks to assist water managers for projects that conserve and use water more efficiently, investigate and develop water marketing strategies, prevent any water-related crisis, and accomplish other benefits to increase the reliability of existing supplies.



UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
ASSISTANCE AGREEMENT

1A. AGREEMENT NUMBER	1B. MOD NUMBER	2. TYPE OF AGREEMENT	3. CLASS OF RECIPIENT
R19AP00232		☒ GRANT ☐ COOPERATIVE AGREEMENT	Special District Government

4. ISSUING OFFICE	5. RECIPIENT
Bureau of Reclamation Acquisitions and Assistance Management Division Acquisitions and Assistance Operations Branch P.O. Box 25007, MS 84-27810 Denver, CO 80225-5007	Tulare Irrigation Company, The 789 N West St P.O. Box 1920 Tulare CA 93275 EIN #: 87-0286747 County: Tulare DUNS #: 050368992 Congress. Dist: CA-22
6. RECIPIENT PROJECT MANAGER Jeremy Barroll Assistant Engineer Tulare Irrigation District 6826 Ave 240 P.O. Box 1920 Tulare CA 93274 Phone: 559-686-3425 Email: jab@tulareid.org	7A. INITIAL AGREEMENT EFFECTIVE DATE: See Block 13a below 7B. MODIFICATION EFFECTIVE DATE: 8. COMPLETION DATE: September 30, 2022

9A. PROGRAM STATUTORY AUTHORITY: Section 9504(a) of the Secure Water Act, Public Law 111-11 (42 United States Code 10364), as amended

9B. CFDA Number: 15.507

10. FUNDING INFORMATION	NON-FEDERAL	RECLAMATION	TOTAL PROJECT COSTS
Total Estimated Amount of Agreement	$432,200	$400,000	$832,200
This Obligation	$432,200	$400,000	$832,200
Previous Obligation	$0	$0	$0
Total Obligation	$432,200	$400,000	$832,200

11. PROJECT TITLE: **Kaweah Sub-basin Water Marketing Strategy**

12a. Acceptance of this Assistance Agreement in accordance with the terms and conditions contained herein is hereby made on behalf of the above-named recipient	13a. Award of this Assistance Agreement in accordance with the terms and conditions contained herein is hereby made on behalf of the United States of America, Department of the Interior, Bureau of Reclamation
BY: [signature] DATE: 07/28/2020	BY: DATE:
12b. NAME AND TITLE OF SIGNER AARON FUKUDA, GENERAL MANAGER	13b. NAME OF GRANTS OFFICER

DWR FSS Program Support

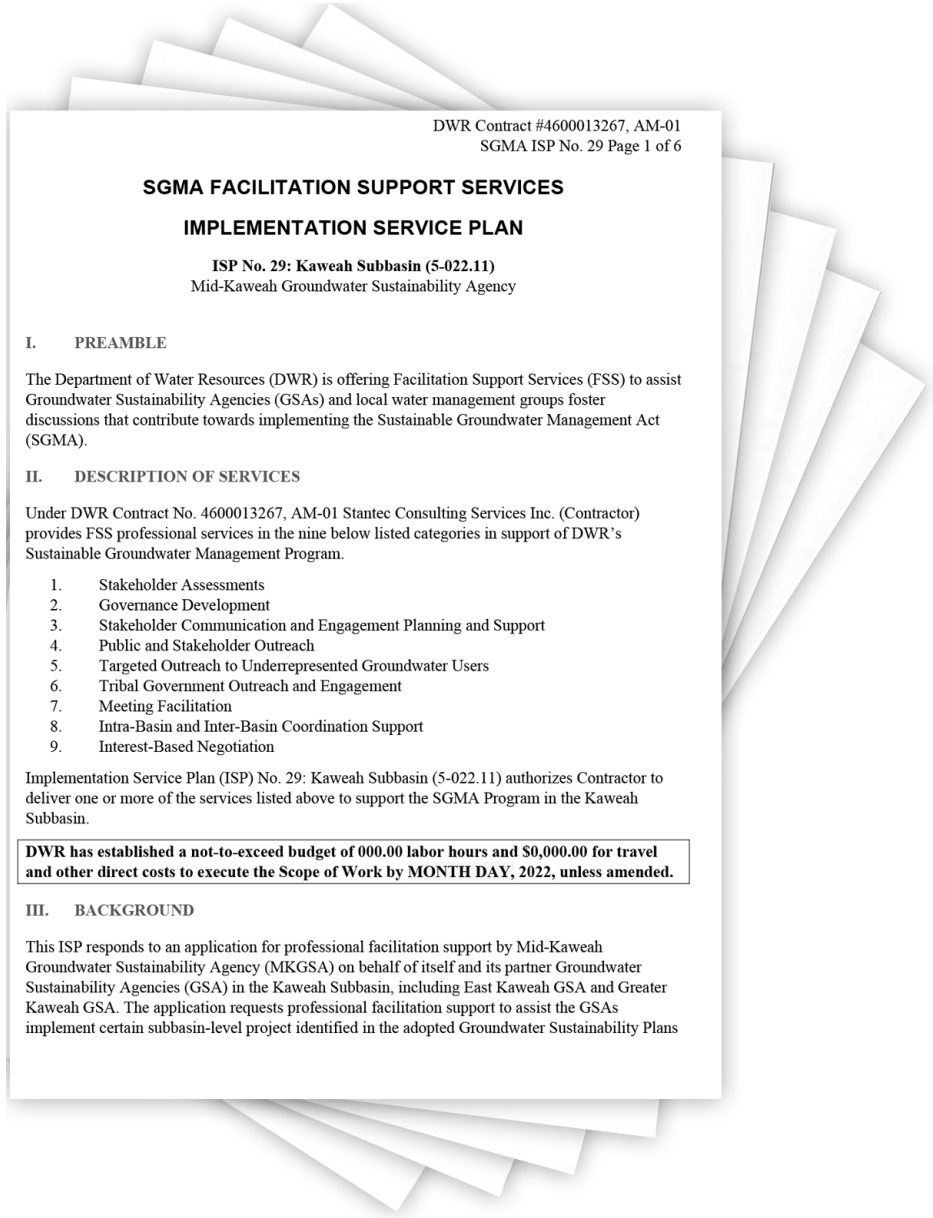
- Application-based program of the Department of Water Resources via Proposition 1 funds
- Managed by the Sustainable Groundwater Management Office (SGMO); implementation by Stantec

Status

- Scope and budget under development with TID following SGMO approval
- Anticipate approval in early November

Proposed Scope under FSS Program

- Project Coordination Team: Facilitation and note taking of bi-monthly meetings
- Strategy Committee: Facilitation and note taking for up to 10 meetings
- Public Workshops: Planning, facilitation and follow-up for up to 6 meetings



DWR Contract #4600013267, AM-01
SGMA ISP No. 29 Page 1 of 6

SGMA FACILITATION SUPPORT SERVICES

IMPLEMENTATION SERVICE PLAN

ISP No. 29: Kaweah Subbasin (5-022.11)
Mid-Kaweah Groundwater Sustainability Agency

I. PREAMBLE

The Department of Water Resources (DWR) is offering Facilitation Support Services (FSS) to assist Groundwater Sustainability Agencies (GSAs) and local water management groups foster discussions that contribute towards implementing the Sustainable Groundwater Management Act (SGMA).

II. DESCRIPTION OF SERVICES

Under DWR Contract No. 4600013267, AM-01 Stantec Consulting Services Inc. (Contractor) provides FSS professional services in the nine below listed categories in support of DWR's Sustainable Groundwater Management Program.

1. Stakeholder Assessments
2. Governance Development
3. Stakeholder Communication and Engagement Planning and Support
4. Public and Stakeholder Outreach
5. Targeted Outreach to Underrepresented Groundwater Users
6. Tribal Government Outreach and Engagement
7. Meeting Facilitation
8. Intra-Basin and Inter-Basin Coordination Support
9. Interest-Based Negotiation

Implementation Service Plan (ISP) No. 29: Kaweah Subbasin (5-022.11) authorizes Contractor to deliver one or more of the services listed above to support the SGMA Program in the Kaweah Subbasin.

DWR has established a not-to-exceed budget of 000.00 labor hours and $0,000.00 for travel and other direct costs to execute the Scope of Work by MONTH DAY, 2022, unless amended.

III. BACKGROUND

This ISP responds to an application for professional facilitation support by Mid-Kaweah Groundwater Sustainability Agency (MKGSA) on behalf of itself and its partner Groundwater Sustainability Agencies (GSA) in the Kaweah Subbasin, including East Kaweah GSA and Greater Kaweah GSA. The application requests professional facilitation support to assist the GSAs implement certain subbasin-level project identified in the adopted Groundwater Sustainability Plans

Water Markets

a. *Key Elements*

b. *Case Examples*

c. *Open Discussion / Q&A*

Elements of a Water Market

CAP on extractions

- Limit on total extraction within a defined geographic area
  - ✓ SGMA provides a specific definition of “Sustainable Yield”

ALLOCATION system

- Assignment of a specific amount of extraction to an individual entity, parcel, or well
- The sum of the individual allocations equals the CAP

TRANSFER of unused allocation

- *Rules, structures* and *operating mechanisms* which facilitate the transfer of unused allocation between market participants and protect against unintended impacts

Existing Water Markets

19 California Adjudicated Basins with Trading Institutions

- Beaumont
- Chino
- Central
- Cummings
- Goleta
- Main San Gabriel
- Mojave
- Puente
- Raymond
- San Jacinto
- Santa Maria
- Santa Paula
- Scott River
- Seaside
- Six Basins
- Tehachapi
- Warren Valley
- West Coast
- West San Bernardino

Additional Markets from around the Western United States

- Central Kansas Water Bank
- Edwards Aquifer, Texas
- Fox Canyon, Ventura County
- Oregon Freshwater Trust
- Truckee-Carson Basin, Nevada
- Twin Platte Natural Resource District, Nebraska
- Umatilla Basin, Oregon

Markets in other countries

- Maipo River, Chile
- Murray-Darling Basin, Australia

Existing Water Markets

- **Method of Allocation**
- Allocation Flexibility
- Unit of Trade
- Term of Transfers
- Type of Exchange
- Geographic Limitations
- Monitoring of Use
- Penalties for Overage
- Protections

- SPECIAL CASE

Historical Use

Maximum Annual Extraction

- Beaumont, Mojave

Highest Extraction over 5 years

- Main San Gabriel, Raymond, Tehachapi

Average Annual Extraction

- Edwards, Fox Canyon, Santa Paula, San Jacinto, Six Basins, W San Bernardino

Acreage / Equal Allocation

Equal Shares

- Puente

Certified Irrigated Acres

- Scott River, Twin Platte

Existing Water Markets

- Method of Allocation
- **Allocation Flexibility**
- Unit of Trade
- Term of Transfers
- Type of Exchange
- Geographic Limitations
- Monitoring of Use
- Penalties for Overage
- Protections

- SPECIAL CASE

Carryover / Storage Credit

- Banking up to 25% of unused Water Right * (Central Kansas)
- Carryover up to 100% of Annual Allocation * (Fox Canyon, Seaside)
- Retain 75% of water saved with conservation / efficiency (Umatilla)

* Expiration: 5 years (Fox Cyn.); 10% per year (C. Kansas)

Borrowing

- Over extract up to 10% of annual allocation (West Coast, Tehachapi, Central)

Rolling Average

- 5 times annual allocation during any 5-year period (Beaumont, Santa Paula, W San Bernardino)

Existing Water Markets

- Method of Allocation
- Allocation Flexibility
- **Unit of Trade**
- Term of Transfers
- Type of Exchange
- Geographic Limitations
- Monitoring of Use
- Penalties for Overage
- Protections

- SPECIAL CASE

One AF of pumping
- To be used during current water year or in perpetuity

One AF of Surface Water
- To be used during current water year or in perpetuity

One Irrigated Acre

Existing Water Markets

- Method of Allocation
- Allocation Flexibility
- Unit of Trade
- **Term of Transfers**
- Type of Exchange
- Geographic Limitations
- Monitoring of Use
- Penalties for Overage
- Protections

- SPECIAL CASE

Temporary only (1 to 5 years)

- Central Kansas, Fox Canyon, Main San Gabriel, Scott River, Tehachapi

Permanent only

- Twin Platte, Cummings

Temporary and Permanent

- Most CA adjudications, Murray-Darling, Oregon Freshwater Trust

Existing Water Markets

- Method of Allocation
- Allocation Flexibility
- Unit of Trade
- Term of Transfers
- **Type of Exchange**
- Geographic Limitations
- Monitoring of Use
- Penalties for Overage
- Protections

- SPECIAL CASE

Formal, centralized exchange

- Agency-operated
  (Central Kansas, Maipo River)
- Third-Party Administrator
  (Fox Canyon, Murray-Darling, Twin Platte)
- Water Trust or Co-Op
  (Santa Paula, Oregon Freshwater Trust, Scott River)

Informal

- Bulletin Board
  (Edwards, Murray-Darling)
- Private Contract Arrangement
  (most CA adjudications, including Mojave & Santa Paula; Murray-Darling; Umatilla)

Existing Water Markets

- Method of Allocation
- Allocation Flexibility
- Unit of Trade
- Term of Transfers
- Type of Exchange
- **Geographic Limitations**
- Monitoring of Use
- Penalties for Overage
- Protections

- SPECIAL CASE

Geographic Boundaries

- Sub-Areas
  (Mojave, Murray-Darling, Santa Maria, Truckee-Carson)
- Special Management Areas
  (Fox Canyon)
- Buffers around municipal wells
  (Twin Platte)

Directional Restrictions

- Edwards, Fox Canyon

Exchange Rates

- Twin Platte

Existing Water Markets

- Method of Allocation
- Allocation Flexibility
- Unit of Trade
- Term of Transfers
- Type of Exchange
- Geographic Limitations
- **Monitoring of Use**
- Penalties for Overage
- Protections

- SPECIAL CASE

Metering
- Central Kansas, Murray-Darling

Metering or Pump Test & Electrical Record
- Mojave

Telemetric Monitoring & Automated Electronic Report
- Fox Canyon

Annual Flyovers & Aerial Imaging
- Twin Platte

Satellite Remote Sensing *

* See analysis by Foster, Mieno & Brozovic (2021)

Measurement errors result in large economic losses and limit ability to mitigate impacts to the environment & 3rd parties

Existing Water Markets

- Method of Allocation
- Allocation Flexibility
- Unit of Trade
- Term of Transfers
- Type of Exchange
- Geographic Limitations
- Monitoring of Use
- **Penalties for Overage**
- Protections

- SPECIAL CASE

Cost of replenishment / importing

- Beaumont, Central, Cummings, Main San Gabriel, Mojave, Six basins, W San Bernardino

$2,700 per AF replenishment fee

- Seaside

$2,049 per AF surcharge

- Fox Canyon

Referred to Court or Water Master

- Puente, Raymond, Santa Paula, Scott River, Tehachapi, West Coast

Existing Water Markets

- Method of Allocation
- Allocation Flexibility
- Unit of Trade
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- Geographic Limitations
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- Penalties for Overage
- **Protections**

- SPECIAL CASE

Small Farmers
- Anonymized Markets
  (Fox Canyon, Twin Platte)

Shallow wells / DACs
- Management Areas / Directional Restrictions
  (Twin Platte)

The environment / GDEs
- Expiration Rates
  (Central Kansas, Fox Canyon, Santa Paula)
- Management Areas / Directional Restrictions
  (Edwards, Fox Canyon)

Existing Water Markets

- Method of Allocation
- Allocation Flexibility
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- **SPECIAL CASE**

Environmental Markets

Oregon Freshwater Trust and the *Scott River Water Trust* are unique in that they use market structures exclusively to secure water for nature, especially to maintain instream flows for migrating fish populations

Existing Water Markets

- Method of Allocation
- Allocation Flexibility
- Unit of Trade
- Term of Transfers
- Type of Exchange
- Geographic Limitations
- Monitoring of Use
- Penalties for Overage

- SPECIAL CASE

Discussion / Q&A

How the Public Can Participate

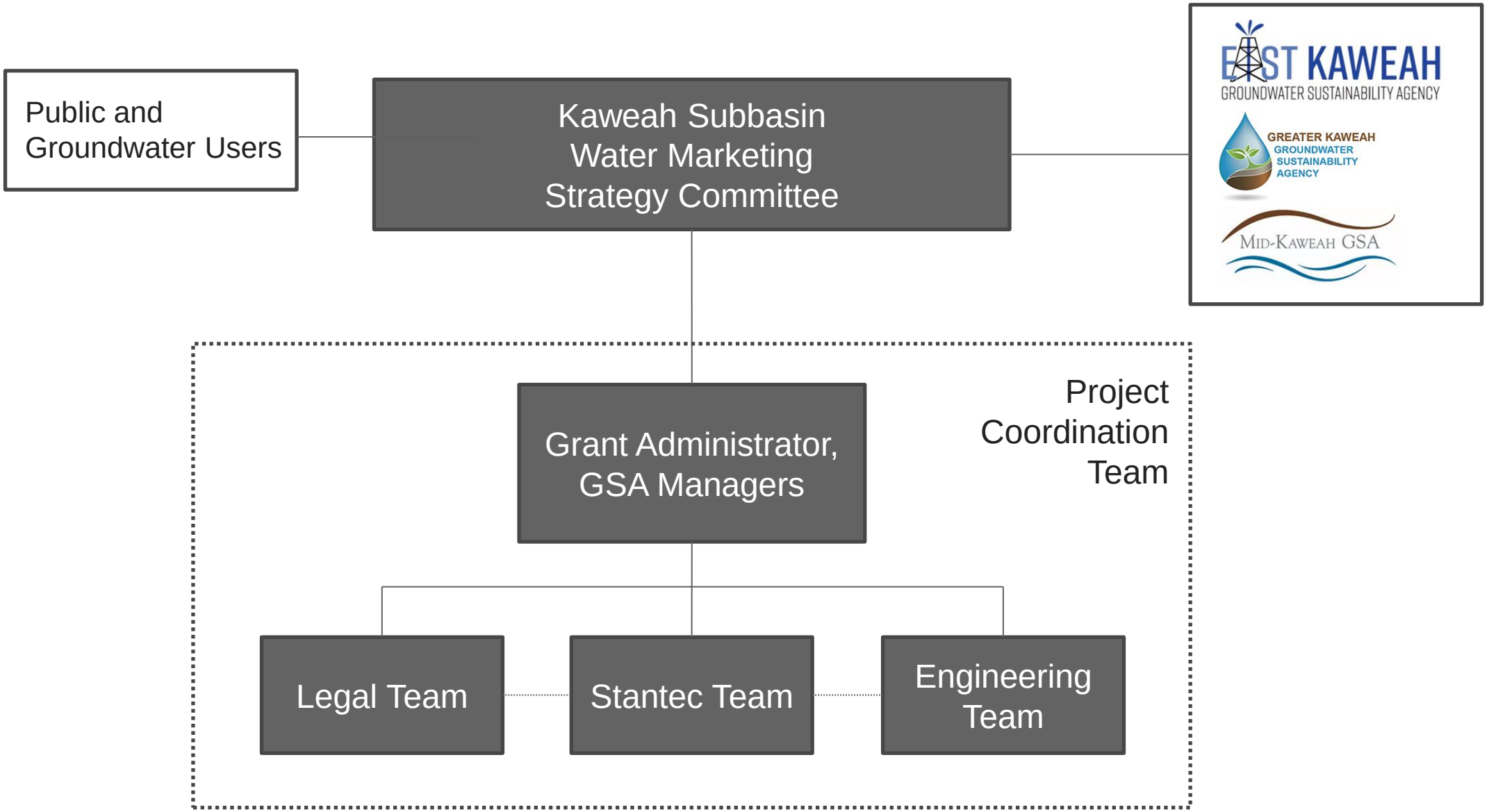
a. *Strategy Committee*

b. *Public Workshops*

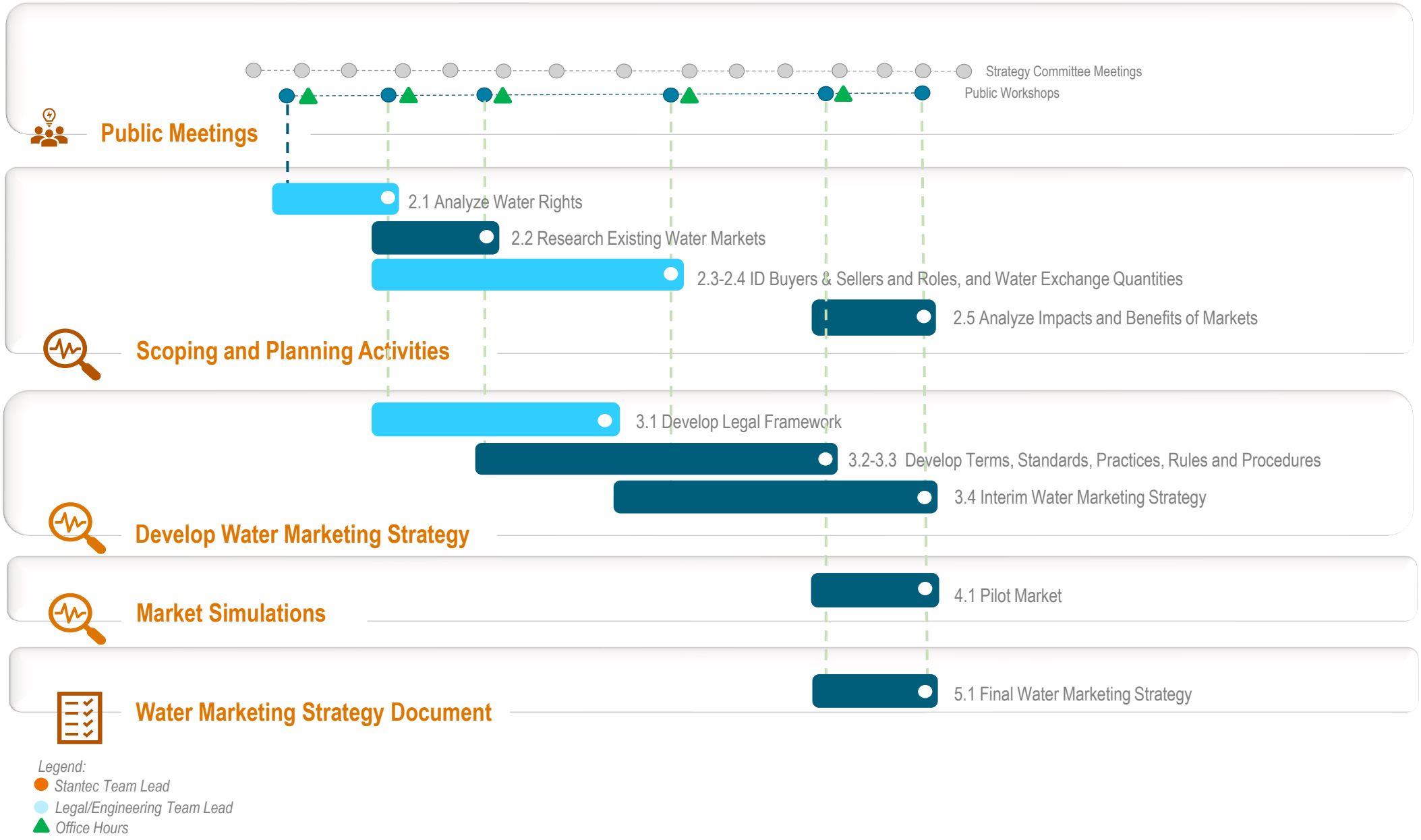
c. *Office Hours*

d. *Open Discussion/Q&A*

Organizational Framework



Schedule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Legend:
Stantec Team Lead
Legal/Engineering Team Lead
Office Hours

Collaborative Market Development

- **Strategy Committee**
- Public Workshops
- Office Hours
- Other

- Monthly meetings by Zoom
- Public is encouraged to attend
- Recordings of meetings posted on MKGSA's YouTube channel
- 11-member committee includes:
  - 3 Kaweah Subbasin GSA Board Members
  - 1 Tulare Irrigation District Board Member
  - 2 Agricultural
  - 1 Industrial (food processing)
  - 2 Water Agency/Ditch company
  - 1 Disadvantaged Community Representative
  - 1 Environmental Representative

Collaborative Market Development

- Strategy Committee
- **Public Workshops**
- Office Hours
- Other

- Present materials developed to date for review and input
- Assist in clarifying potential market challenges and opportunities
- Informs Strategy Committee of public opinions on Water Market Strategy
- All materials published on Kaweah Subbasin Marketing Strategy web page at www.tulareid.org
- Recordings of meetings posted on MKGSA's YouTube Channel

Collaborative Market Development

- Strategy Committee
- Public Workshops
- **Office Hours**
- Other

- Informal one-one-one or small group discussions
- Held two-four days following completion of a public workshop
- Hosted by the TID and the Project Team by Zoom
- Focused on continuing discussions with stakeholders and potential end users
- How to Participate:
  - Schedule and Zoom link available at the Strategy Committee webpage at www.tulareid.org
  - To RSVP: midkaweah@gmail.com

Collaborative Market Development

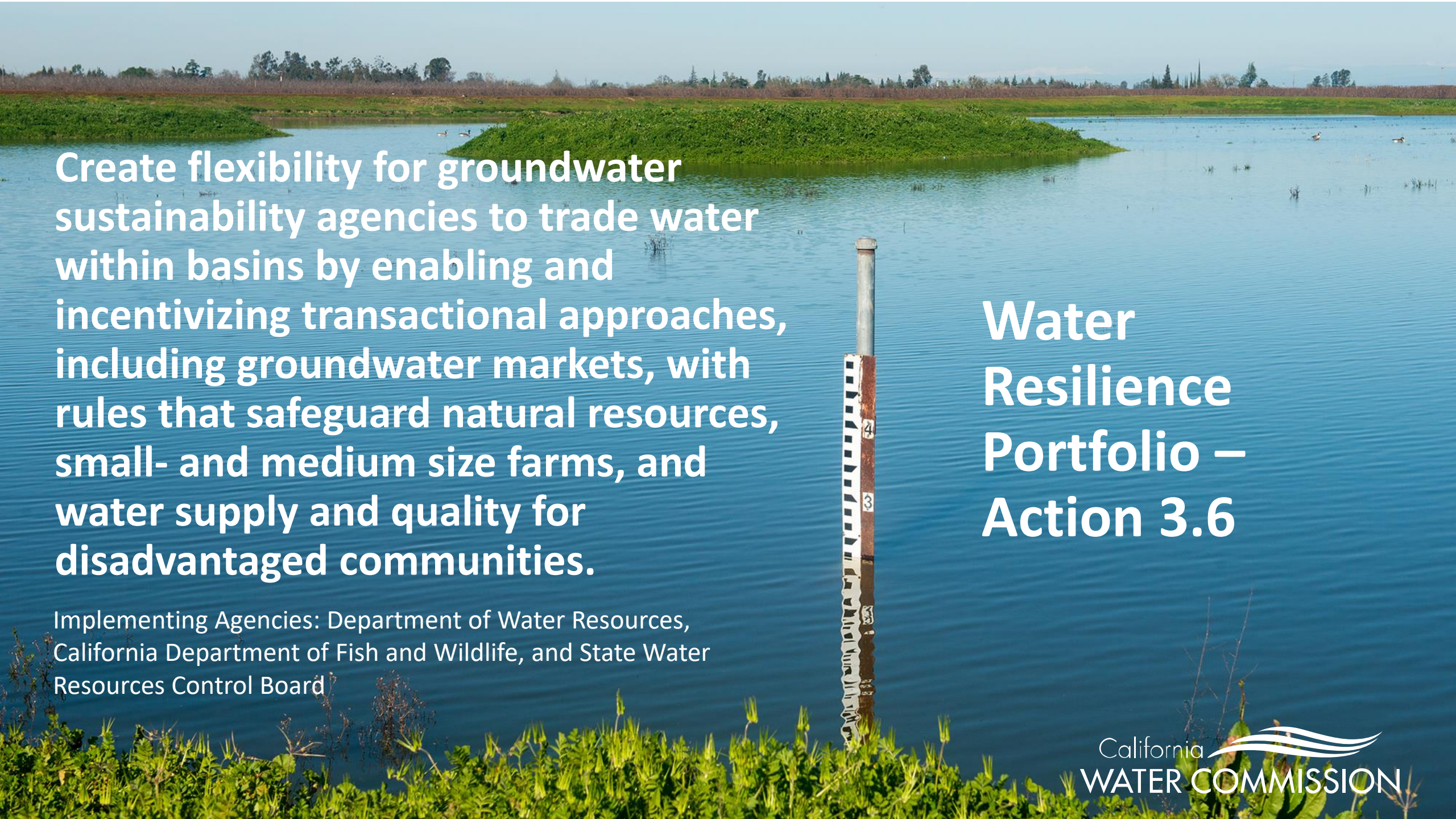
- Strategy Committee
- Public Meetings
- Office Hours
- **Other**

- Updates and reports on preparation of the Water Marketing Strategy provided at:
  - Quarterly Kaweah Subbasin Management Team Committee meetings
  - Kaweah Subbasin GSA Board Meeting reports
  - Updates to GSA Advisory Committee meetings

California Water Commission

Discussion on Well-Managed Groundwater Trading

California WATER COMMISSION October 27 • 2021



Water Resilience Portfolio – Action 3.6

Create flexibility for groundwater sustainability agencies to trade water within basins by enabling and incentivizing transactional approaches, including groundwater markets, with rules that safeguard natural resources, small- and medium size farms, and water supply and quality for disadvantaged communities.

Implementing Agencies: Department of Water Resources, California Department of Fish and Wildlife, and State Water Resources Control Board

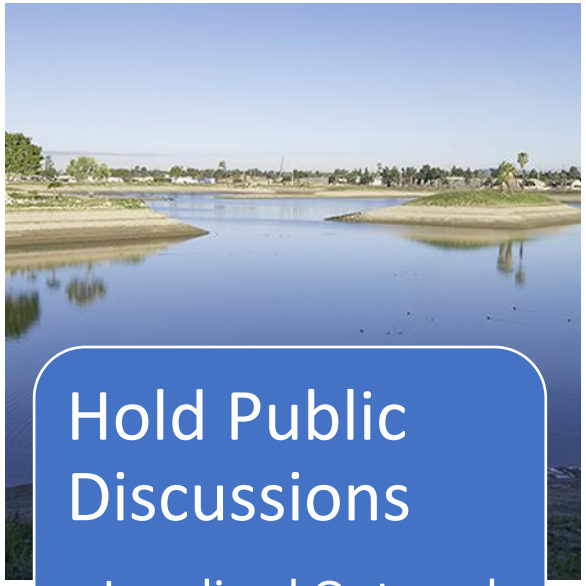
California WATER COMMISSION

Commission timeline

Frame the Issue

- Expert Panels
- Small Group Conversations

June - September 2021



Hold Public Discussions

- Localized Outreach
- Public Workshops

September - November 2021

Draft White Paper

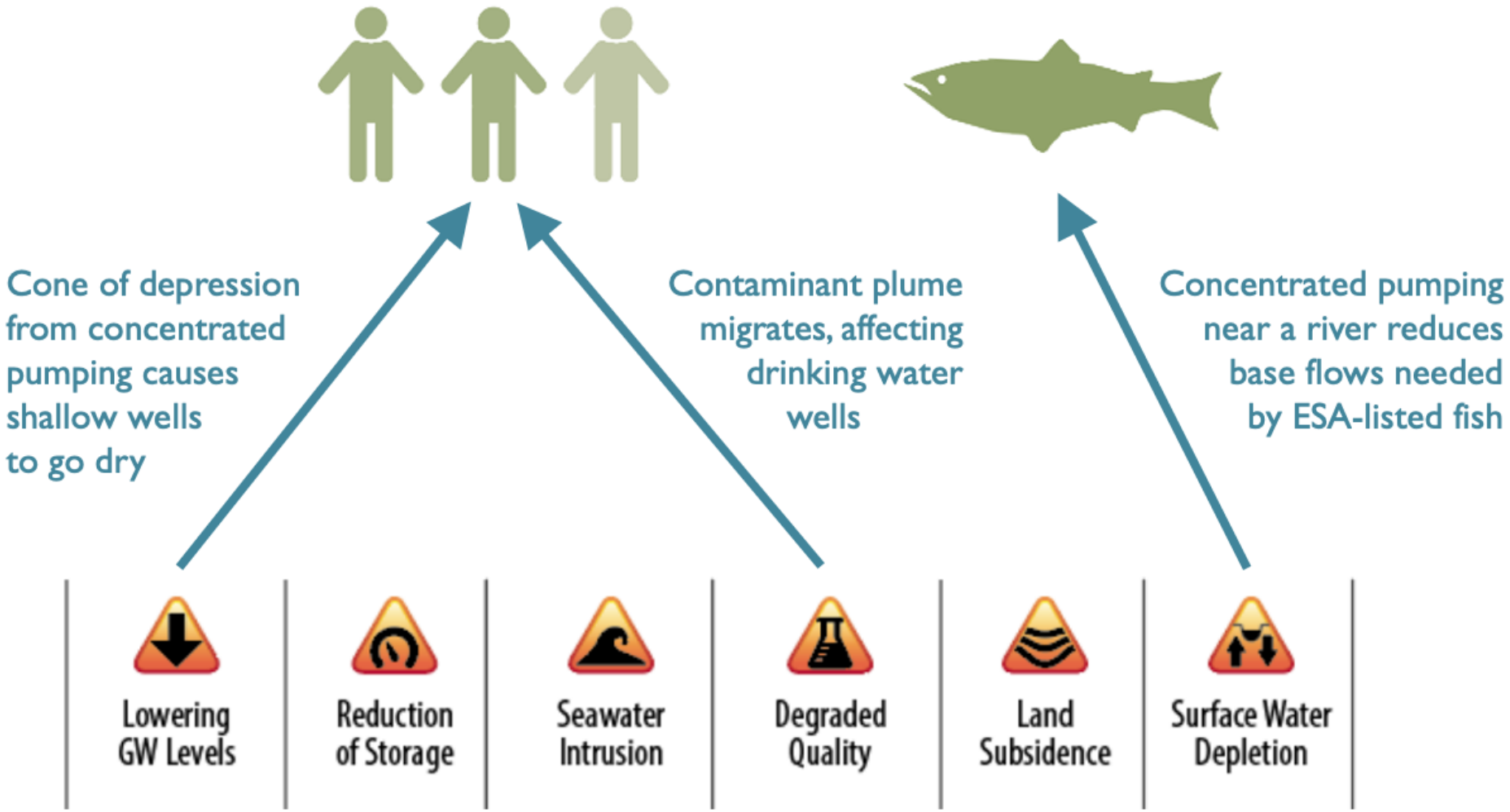
- Present Draft
- Present Final

January - March 2022

Groundwater trading: Best case scenario

- Flexible, efficient approach to reduction of groundwater use
- Reduced economic impact to individuals, communities, region
- No negative impacts on third parties
- Opportunities for diverse water users to participate in ways that benefit them

Groundwater trading: Potential negative impacts



Slide credit: Nell Green Nylen, Wheeler Water Institute, Center for Law, Energy & the Environment (CLEE), UC Berkeley School of Law

Trading rules that could help minimize impacts:

Impacts	Trading rules
Cone of depression causes shallow drinking water or agricultural wells to go dry	• Spatial concentration limits • Pumping schedules
Contaminant plume migration makes water from drinking water wells unsafe to drink	• Pumping restrictions to prevent migration • Requirements to provide substitute water
Excessive pumping near a river drops its level too low, imperiling fish	• Directional restrictions (”sell-only” zone) • Closure dates
Landowners selling extraction allocations out from under tenant farmers	• Notice requirements • Consent requirements
Various	• Mitigation / compensation requirements

Slide credit: Nell Green Nylen, Wheeler Water Institute, Center for Law, Energy & the Environment (CLEE), UC Berkeley School of Law

Cross-cutting themes

- Trust is critical
- Part of a larger groundwater management effort
- Good data is imperative
- Start small – geographically, temporally
- Beware market power & gaming the system
- State has a role to play

Characteristics of well-managed trading

Precursors

- Accounting and allocations are in place
- Water use is measured
- Flexibility to develop local solutions exists
- Good governance is in place

Design

- Goal for trading program is articulated
- Stakeholders are fully engaged
- Understanding of third-party impacts
- Clear, well-designed trading rules are developed
- Design is tested & refined

Operation

- Market information is transparent
- Operations are efficient
- Means of monitoring/reporting *and mitigating* impacts is in place
- Enforcement is consistent

Points of divergence

- Confidentiality v. transparency
- Customization v. standardization
- Local control v. state oversight

Role for the State

- Provide information & education
- Provide technical & financial assistance
- Provide guidance/minimum standards
- Ensure metrics, monitoring are in place
- Ensure Human Right to Water is met
- Enforce safeguards for vulnerable users
- Other?

Discussion Questions

1. What do you think about groundwater trading programs?

2. Is groundwater trading likely to impact or benefit you?

3. What would make groundwater trading programs work well?

4. What role would you like to see the state play?

Next steps

- Public workshops
  - Thu, October 28, 2:30-5 p.m.
  - Fri, October 29, 9:30-12 p.m.

Register at
https://cwc.ca.gov/Meetings

Contacts

Laura.Jensen@water.ca.gov

California
WATER COMMISSION

Adjourn

a. Closing Comments