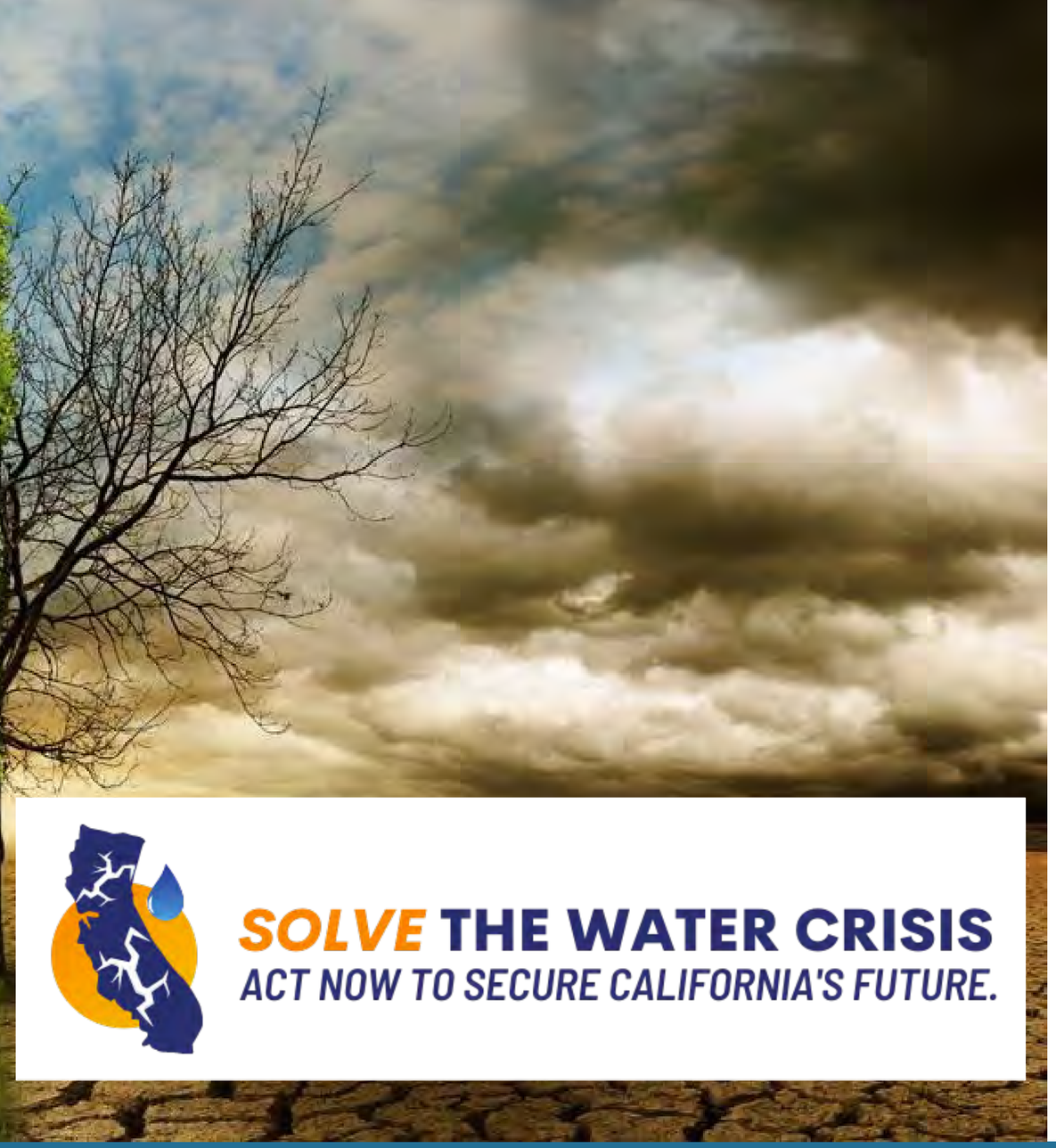


Solve the Water Crisis Presentation by Western Municipal Water District

Craig Miller, General Manager
Western Municipal Water District

OWOW Steering Committee | November 17, 2022

Agenda Item 4.A.

WESTERN MUNICIPAL WATER DISTRICT

SOLVE THE WATER CRISIS
MISSION

Solve the Water Crisis, through a critically needed statewide education effort, brings into sharp focus the ongoing water supply crisis that is already impacting residents' quality of life, economic growth, community health, and the environment, as well as risking California's future.

By raising awareness among California policymakers and thought leaders, Solve the Water Crisis will inform policymakers of the enormous water supply crisis and the urgency that requires bold and immediate State action to secure California's future.

SOLVE THE WATER CRISIS
ACT NOW TO SECURE CALIFORNIA'S FUTURE.

SOLVE THE WATER CRISIS

Growing Participation

SOLVE THE WATER CRISIS
ACT NOW TO SECURE CALIFORNIA'S FUTURE.

80+ INTERESTED AGENCIES

COLLABORATORS

- California Business Roundtable
- Western Growers
- California Building Industry Association
- Association of California Water Agencies
- California Municipal Utilities Association
- Southern California Water Coalition

TARGET PARTNER LIST

- Business Chambers
- Cities and Counties
- Civic Agencies
- Environmental
- Labor
- Recreation
- Social Justice
- Tourism

26 MEMBERS

- Camrosa Water District
- City of Corona
- Coachella Valley Water District
- East Valley Water District
- El Dorado County Water Agency
- Eastern Municipal Water District
- Elsinore Valley Water District
- Inland Empire Utilities Agency
- Irvine Ranch Water District
- Jurupa Community Services District
- Las Virgenes Municipal Water District
- Mesa Water District
- Municipal Water District of Orange County
- Olivenhain Water District
- Puente Basin Water District
- Rancho California Water District
- Riverside Public Utilities
- Rubidoux Community Service District
- San Bernardino Municipal Water District
- San Bernardino Valley Municipal Water District
- San Juan Water District
- Temescal Valley Water District
- Three Valleys Municipal Water District
- Turlock Irrigation District
- Valley Center Municipal Water District
- Western Municipal Water District

OUR WATER FUTURE DOES NOT LOOK GOOD

Residents, businesses, and policymakers do not understand the severity of California’s ongoing and systemic water supply crisis.

SOLVE THE WATER CRISIS
ACT NOW TO SECURE CALIFORNIA'S FUTURE.

CURRENT STATE PRIORITIES

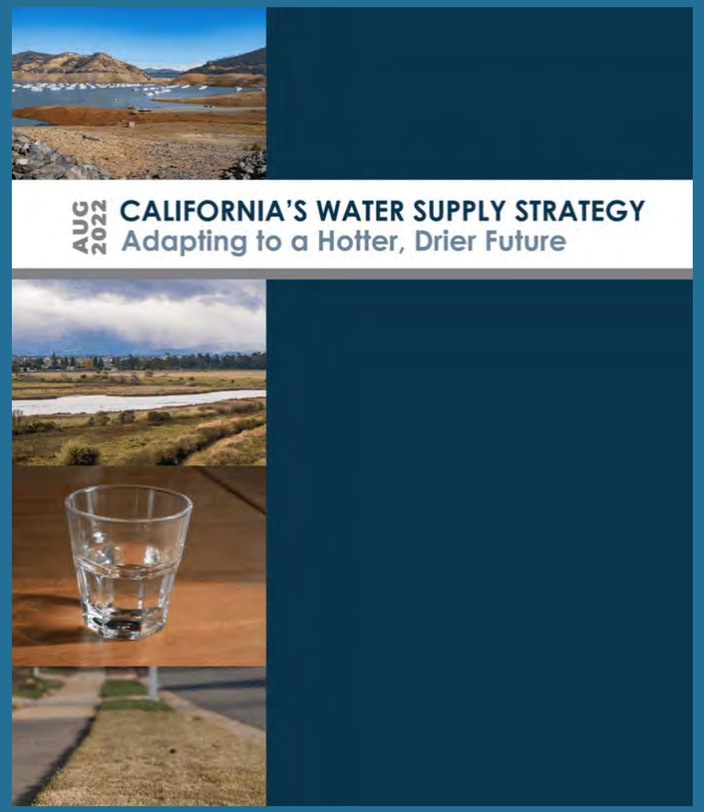
- Urban conservation
- Intensify environmental and regulatory mandates
- Shift water supply burdens to local agencies
- Demand affordability despite increasing costs

According to a recent PPIC poll, "drought remains the dominant environmental issue for Californians." Just as important, a majority of Californians, nearly 70 percent "don't feel that government is doing enough to combat the drought."

SOLVE THE WATER CRISIS
ACT NOW TO SECURE CALIFORNIA'S FUTURE.

Governor Newsom's New Water Supply Plan

Water Agencies Applaud Governor Newsom's New Water Supply Strategy



- Supportive sentiment
- Great step forward
- Applaud leadership, recognition of urgency and need
- Need for continued work and follow through

SOLVE THE WATER CRISIS
ACT NOW TO SECURE CALIFORNIA'S FUTURE.

OBJECTIVES

SOLVE THE WATER CRISIS
ACT NOW TO SECURE CALIFORNIA'S FUTURE.

AGRICULTURE
HIT HARD

1. 0% allocation on CVP and 5% allocation on SWP (2022)
2. $1.7 billion revenue loss
3. 14,600 jobs lost
4. 395,000 acres left dry and unplanted
5. Food security

SOLVE THE WATER CRISIS
ACT NOW TO SECURE CALIFORNIA'S FUTURE.

URBAN LOSSES

1. SWP cutback from 5MAF to 250,000 AF
2. Southern CA loss of 1.9MAF from SWP
3. Colorado River cuts coming – so it can't make up the difference
4. Coastal Commission denied HB desal permit
5. Recycled water effectively committed
6. State needs roughly 20MAF of new supply – where do we go for this water?

SOLVE THE WATER CRISIS
ACT NOW TO SECURE CALIFORNIA'S FUTURE.

SOLUTIONS

Educate key audiences on solutions to address the state's water supply and reliability issues, including statewide and long-term benefits of solutions.

1. More surface and groundwater storage
2. Improved inter-regional and local conveyance
3. Creative regulatory solutions such as the voluntary agreements
4. New supply including investments in local water infrastructure, such as groundwater recharge, desalination, and recycling

SOLVE THE WATER CRISIS
ACT NOW TO SECURE CALIFORNIA'S FUTURE.

TARGET AUDIENCE

Legislators

- Water Champions
- Legislative Leadership
- Water and Budget Committees

Newsom Administration

- Policy
- Finance
- Communications
- GoBiz

Regulators

- Resources Agency
- Department of Fish and Wildlife
- Department of Water Resources
- State Water Resources Control Board

SOLVE THE WATER CRISIS
ACT NOW TO SECURE CALIFORNIA'S FUTURE.

ACTIVITIES

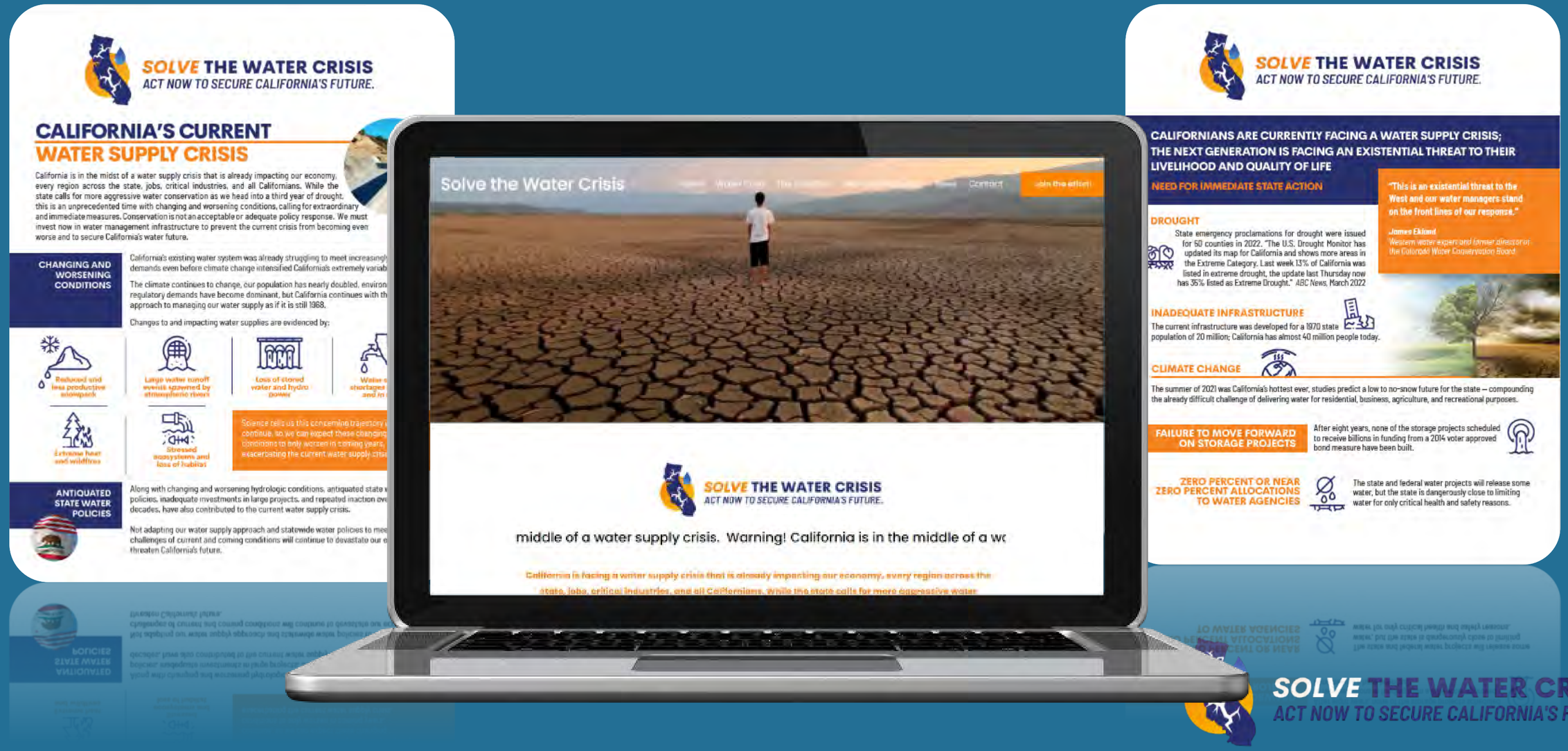
Media Engagement
Stakeholder Education
Digital Ad Campaign
Sacramento Engagement

OPED: California's Water Supply Crisis Is Much More Than This Drought
Picked up by Southern California News Group

- Print: **684K** total readership
- Web: **9.4 million** monthly unique visitors, **20.1 million** monthly page views

SOLVE THE WATER CRISIS
ACT NOW TO SECURE CALIFORNIA'S FUTURE.

ACTIVITIES: Website and Collateral



Despite tremendous local investment, the State is not living up to its responsibility for evolving California's water system—improvements are now long overdue. Current policy priorities are not helping…

We need your support and engagement today.

THANK YOU.

SOLVE THE WATER CRISIS

ACT NOW TO SECURE CALIFORNIA'S FUTURE

FOR MORE INFORMATION VISIT
WWW.SOLVETHEWATERCRISIS.COM

Prop 1 Round 2 IRWM Resolution and Project Updates

Ian Achimore, Senior Watershed Manager

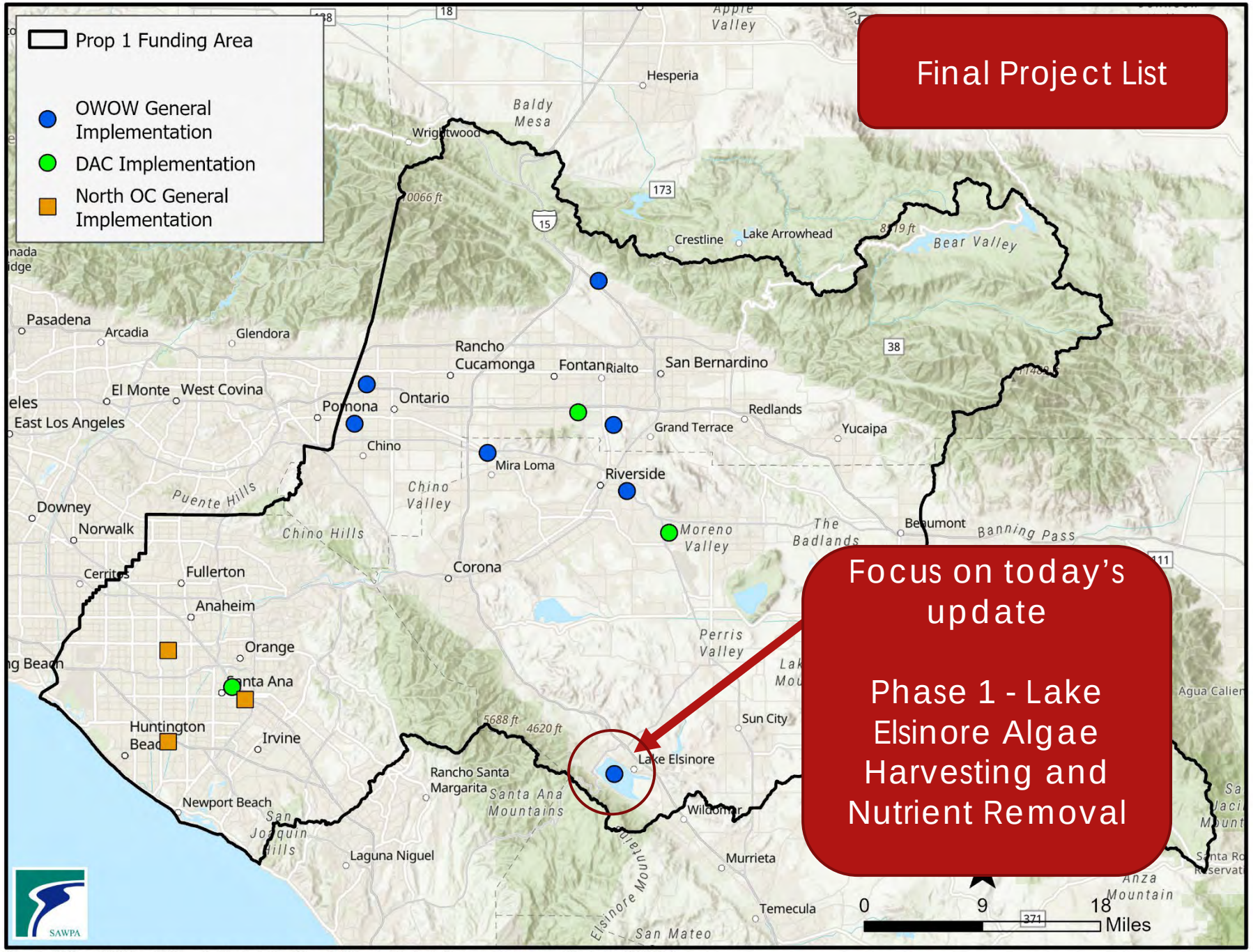
OWOW Steering Committee | November 17, 2022

Agenda Item 4.B.

Recommendation

- Recommend that the SAWPA Commission adopt SAWPA Resolution 2022-17 in order to submit the final grant application to DWR.

Final Project List

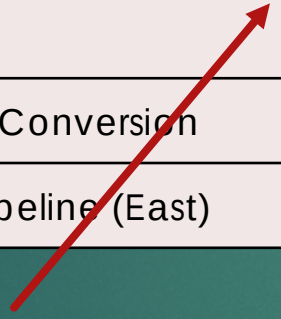


P:\projects\Prop1R2\Prop1R2FundedProjectsMap\Prop1R2FundedProjectsMap.aprx LoProposedProjects SW-3104

General Implementation Project	Applicant	Water Supply (AFY)	Water Quality (MGD)	Habitat (Acres)	Flood Protection (Acres)	Funding Amount
Santa Ana River Watershed Weather Modification Pilot	SAWPA	8,200	4.40	-	-	$861,400
Etiwanda Intervalley Water Quality and Water Resiliency Phase-1A	JCSD	4,355	4.00	-	-	$2,954,213
Wellhead Nitrate Treatment for Wells 4 & 27	MVWD	4,516	4.03	-	-	$2,533,492
Cable Creek Basin (Upper)	SBCFCD	859	-	-	390	$2,521,678
Phase 1 - Lake Elsinore Algae Harvesting and Nutrient Removal	LESJWA	-	1.00	3,000	-	$1,500,000
Lake Rialto Habitat Management and Community Open Space	Rialto, City	-	5.90	10	-	$2,149,748
Well 2 Replacement	MVWD	3,226	2.88	-	-	$2,006,311
City of Rialto Recycled Intertie	IEUA	3,500	3.10	-	-	
Santa Ana River Sustainable Parks & Tributaries Water Reuse	SBVMWD	5,109	-	187	-	
Calimesa Aquifer Storage and Recovery	YVWD	2,890	-	-	-	
Well Pump Replacements	MVWD	4,194	-	-	-	
Improving Recycled Water Used in Local Groundwater Recharge	WMWD	985	3.0	-	-	
Well 4 Replacement	MVWD	1,936	1.73	-	-	
Water Well RN #6 Nitrate Removal System	RHWC	1,300	1.20	-	-	
Improved Lake Circulation at Prado Regional Park	SBCRP	-	4.3	62	-	
Large Landscape Water Efficiency Program	IEUA	671	0.04	-	-	
Regional Water Distribution System Leak Detection and Repair	MWDOC	1,338	1.19	-	-	
Cactus Basins Connector Pipeline	SBVMWD	1,360	-	-	-	

Top project threshold.

DAC Project	Applicant	Water Supply (AFY)	Water Quality (MGD)	Flood (Acres)	DAC %	Score	Funding Amount
New Washington Well	Santa Ana, City	4,000	3.57		85%	17.00	$3,394,743
Lead Service Line Replacements in the Bloomington DAC	WVWD	3,454	3.10		100%	14.72	$315,000
Box Springs Mutual Water Company Well Improvement	California Rural WA	411	0.37		100%	1.93	$1,885,257
Recycled Water Use Expansion	Santa Ana, City	370	-		63%	0.83	
Shamrock and Meridian Septic to Sewer Conversion	Rialto, City	-	0.13		100%	0.29	
Cottonwood Avenue Recycled Water Pipeline (East)	EMWD	90	-		100%	0.20	



Top project threshold.

“Back Up” Project List

Project Name	Project Lead	Grant Request*	Total Cost
Shamrock and Meridian Septic to Sewer Conversion Project (DAC)	City of Rialto	$3,143,400	$3,143,400
City of Rialto Recycled Intertie (General Implementation)	Inland Empire Utilities Agency	$3,000,000	$53,000,000
Grand Totals		**$6,143,400**	**$56,143,400**

*This is the grant request through the OWOW Call for Projects, not the final grant request to DWR. The possible amount granted to the project will depend on the project(s) that drop out during the implementation phase.

Phase 1 - Lake Elsinore Algae Harvesting and Nutrient Removal Project

- Widespread harmful algal blooms (HABs) occur in the lake due to ongoing and legacy nutrient loads which are exacerbated by persistent drought and heatwaves.
- As a result, the City has been forced to post public health warnings and to close the lake for recreational activities, which has negative impacts on local businesses and tourism.
- The draft revised Total Maximum Daily Load (TMDL) report for Lake Elsinore recognizes that innovative, in-lake remediation projects are needed.

Scope of the Project

- Project includes implementation of innovative algae harvesting technology to address impacts of HABs.
- Project will include use of Hydronucleation Flotation Technology (HFT), an advanced liquid/solid separation process that has been optimized to operate at a high hydraulic rate.

Photo credit: AECOM

Issues Applicant is Working to Resolve

- Long-term cost share is difficult to acquire for a City of Lake Elsinore's size.
  - Annual long-term operation costs could be $300,000.
- Lake-side acreage needed for drying slurry and potential odors is a factor.
- The City's consultant is providing updated budget and modified project plans that could possibly result in a scope-change for the project.
- The City has until November 15, 2022 to make a final decision and provide feedback to SAWPA.

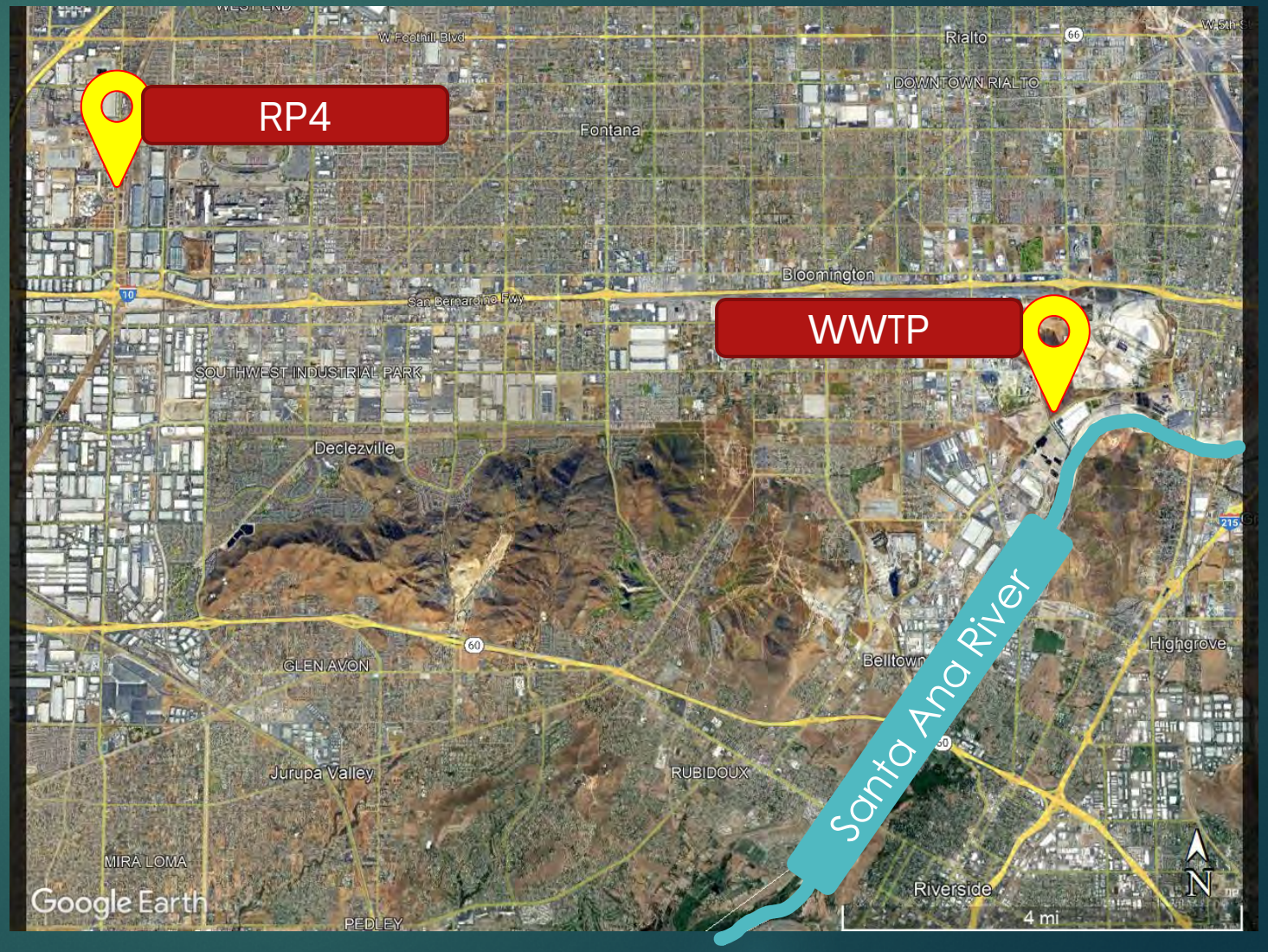
Back Up Project to Utilize if Lake Elsinore Does Not Move Forward

- Inland Empire Utilities Agency's City of Rialto Recycled Intertie Project
  - In October 2022, IEUA and City of Rialto agreed to a recycled water purchase term sheet.
- $53 Million total cost.
  - $1.5 million in grant funding from Lake Elsinore project would be transferred to the IEUA project.
  - IEUA submitted a $50 million grant application for Federal Emergency Management Agency funding
  - IEUA will submit a state revolving loan application in December.
  - IEUA staff has explored the municipal bond market as an alternative option.

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Further Information About Project

- Rialto's wastewater treatment plant (WWTP) currently discharges 6.2 million gallons per day (MGD) of recycled water to the Santa Ana River.
- Will be pumped from Rialto to IEUA's Recycled Plant No. 4 (RP4).
- Two retail water agencies adjacent to RP4 will then purchase this water.



Grant Funding By Category
(No changes between categories)

Category	Projects Included	Grant Amount
Disadvantaged Community	3	$5,595,000
OWOW - General Implementation	7	$14,526,843
North OC - General Implementation	3	$7,583,800
SAWPA - Grant Administration (4.7% of total grant available)	NA	$1,352,929
Grand Total	13	$29,058,572

New Water and Revised Water for the Watershed

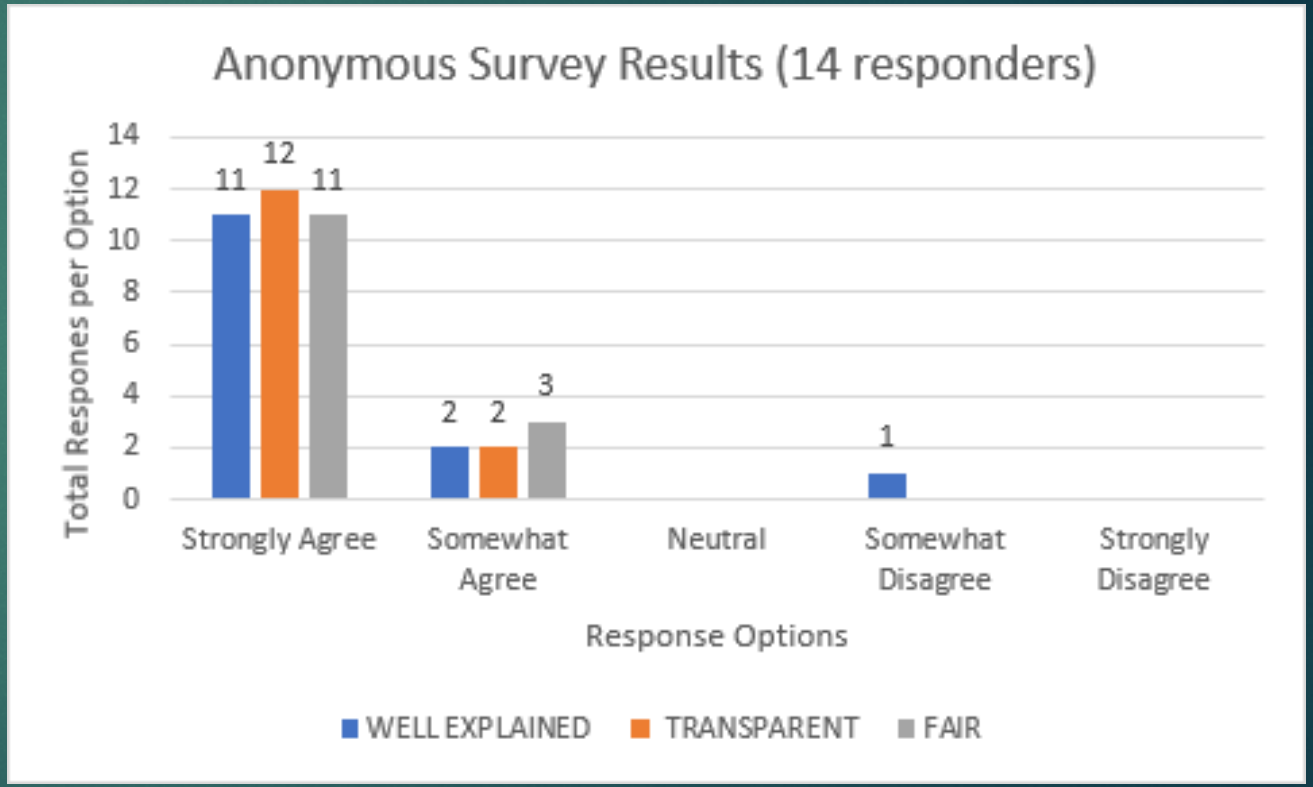
- "New water" - water from a source that was not in use prior,
- "Revised water" - water from a source that is currently discharged (such as secondary treated water) or water that is currently not in use due to regulatory or water quality issues.

Local Water from Prop 1 Round 2 Projects	Acre Feet per Year
New Water	13,312
Revised Water	18,466*
Total Local Water	**31,778****

*Would increase by 3,500 AF if IEUA back up project is utilized as a replacement project.
**Represents 3% of historical local water that is directly delivered to customers.

Feedback from Stakeholders Regarding Call for Projects

- SAWPA sent a three-question survey to those who participated in the Call for Projects process,
- The questions focused on whether the process was
  - Well explained,
  - Transparent, and
  - Fair.



Resolution for Adoption

- Recognizes the work done through the OWOW Call for Projects,
- Required as part of the DWR application due on February 1, 2023,
- Resolutions provides flexibility if back up projects become funded projects,
- Allows SAWPA to execute a grant agreement with DWR as well as sub-agreements with project leads, and
- SAWPA staff will bring back updates on any developments with regard to the need to fund back up projects.

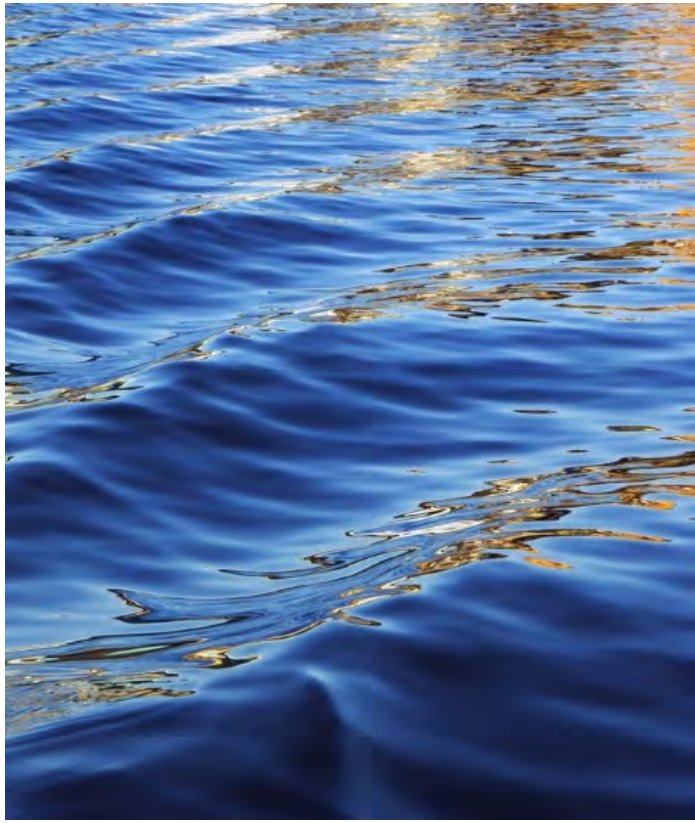
Recommendation

- Recommend that the SAWPA Commission adopt SAWPA Resolution 2022-17 in order to submit the final grant application to DWR.

Santa Ana Weather Modification Pilot – Status Report

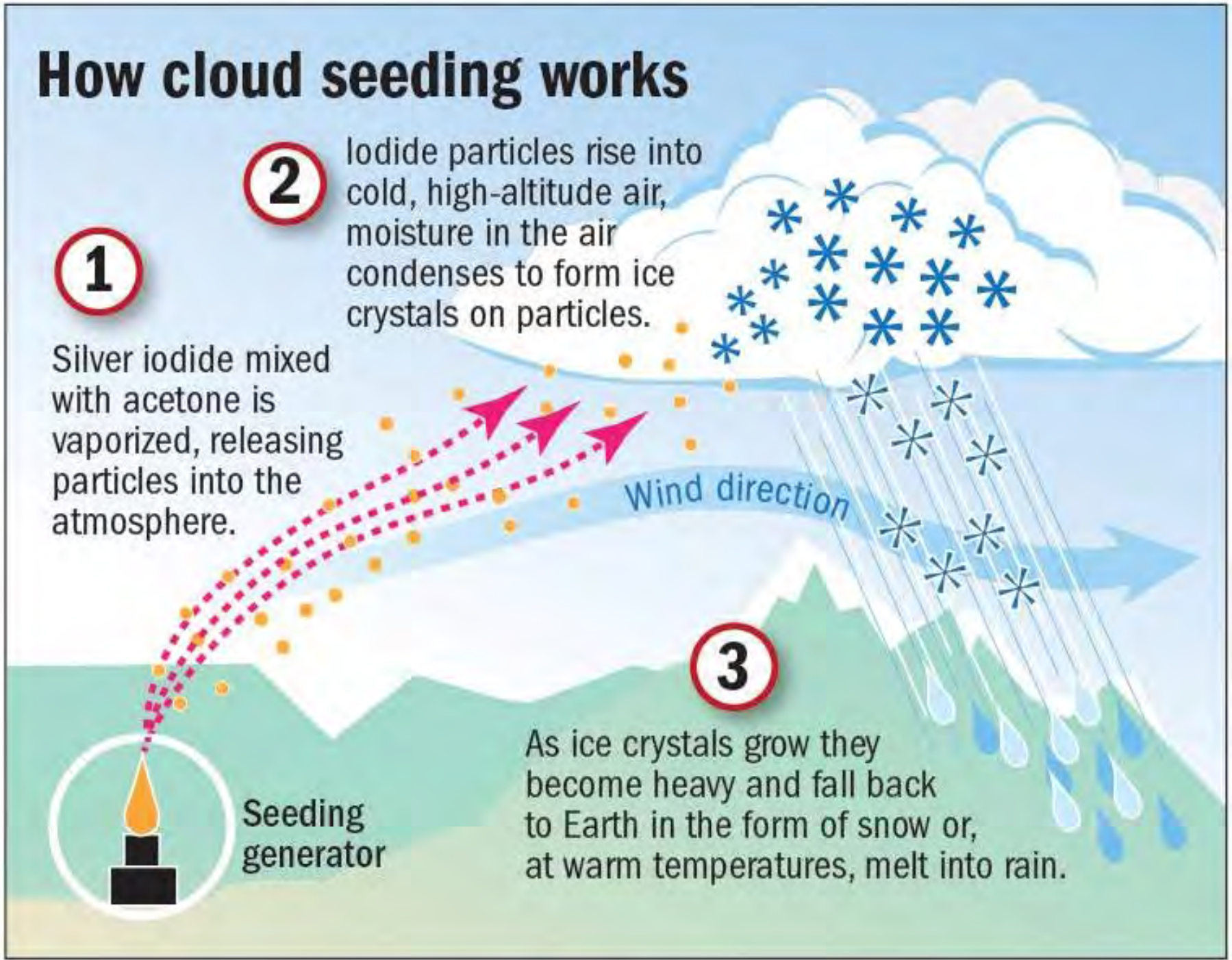
Mark Norton, Special Projects Manager
Santa Ana Watershed Project Authority

Item No. 4.C.



Recommendation

Staff recommends that the OWOW Steering Committee receive and file this status report on the Santa Ana River Watershed Weather Modification Pilot Project.



Source: The Fact Site

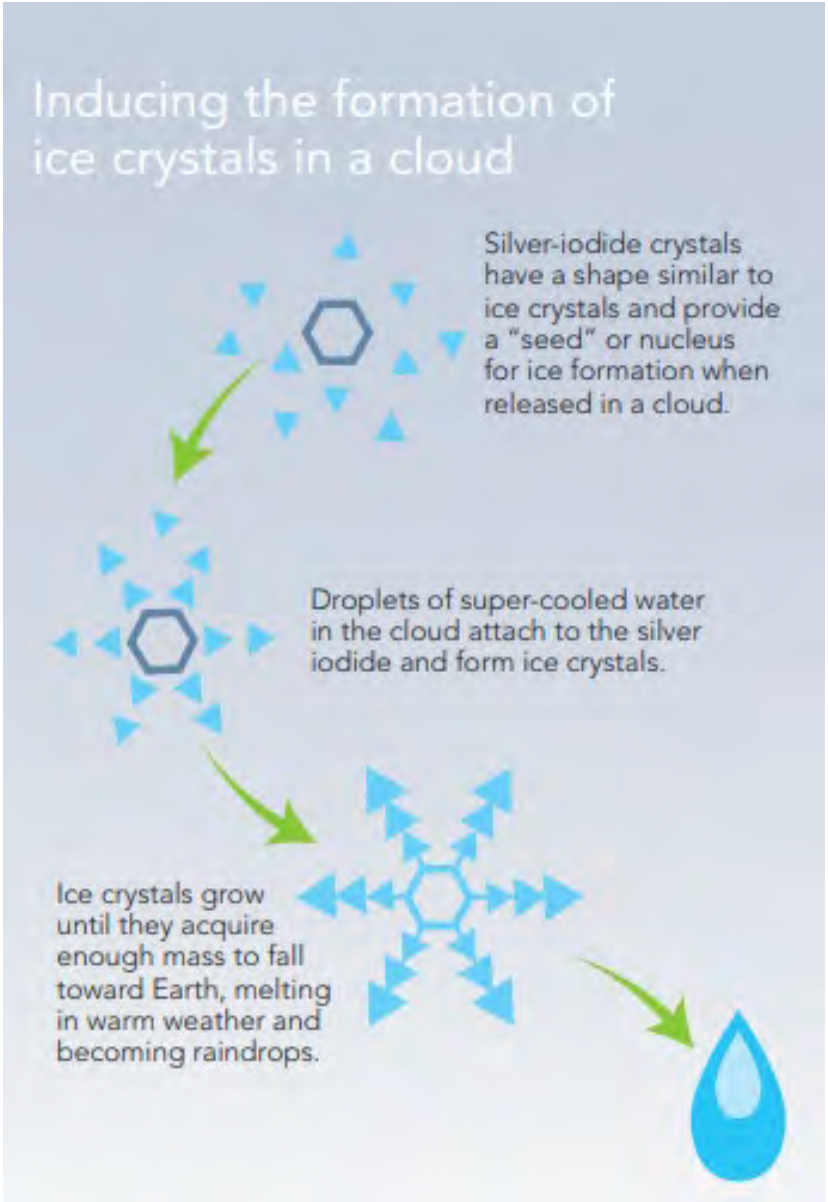
Cloud Seeding History

Background

- Physics is well known
- Started in the U.S. in the 1940s
- Challenges: Overselling, limited science
- Misconceptions remain

Recent Advances

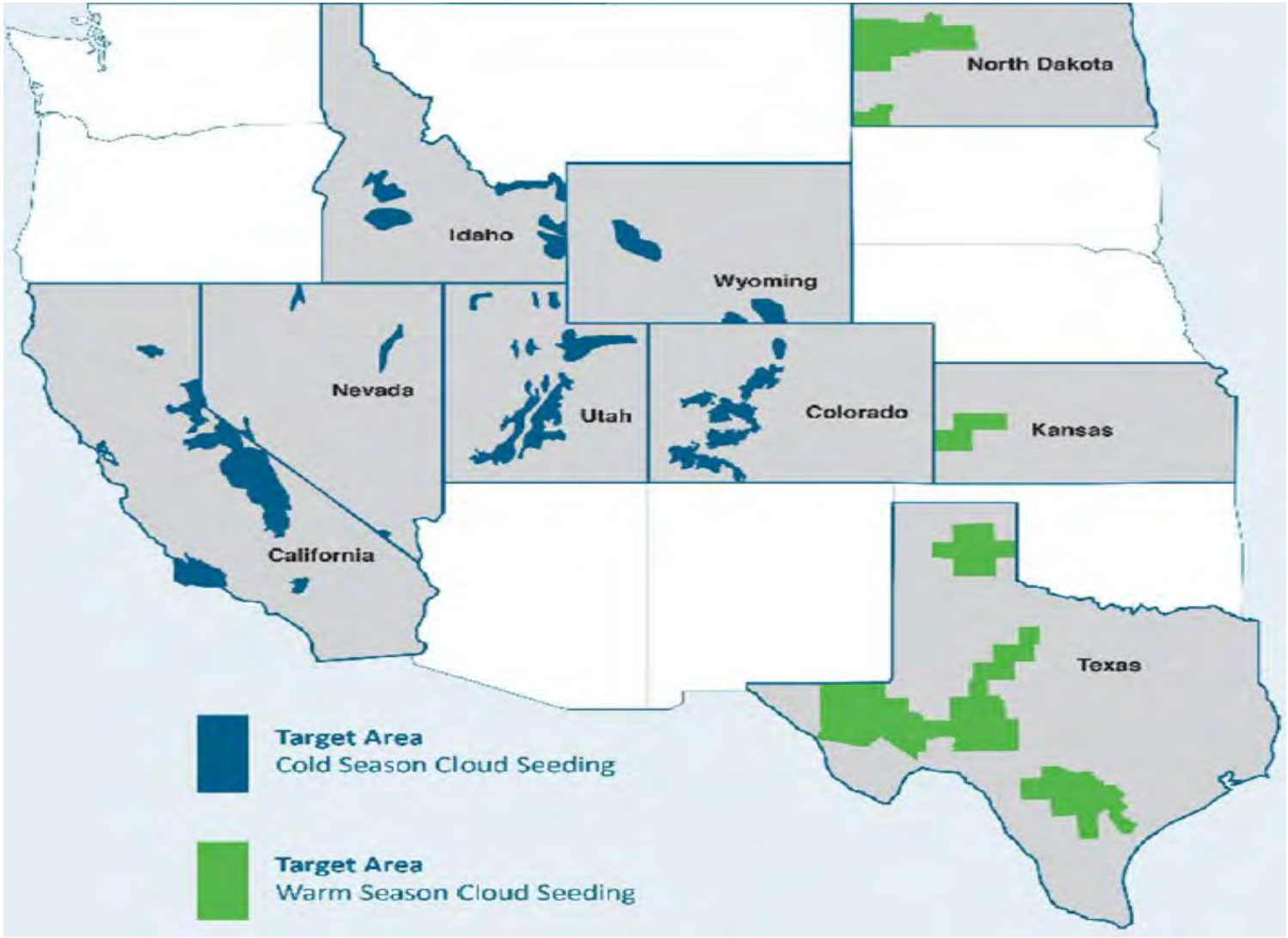
- Weather forecasting
- Computing / Modeling
- Seeding methods
- Scientific validation studies



Source: North American Weather Modification Council

U.S. Projects

- Cold Season Cloud Seeding Leaders
  - CA, CO, ID, UT, WY, NV
- Applications
  - Power Utilities (hydropower)
  - Ski areas
  - Water Resource Agencies
  - Irrigation Districts
- California Projects
  - Santa Barbara County
  - San Luis Obispo
  - Sacramento Municipal Utility District
- CA DWR
  - Cloud seeding is a “safe and effective means of augmenting local water supplies."



Source: North American Weather Modification Council

Ground Based Seeding Methods

CNG's (Cloud Nuclei Generators)

- Ideal for orographic lift (winds caused by land barriers)
- Create a continuous plume
- Inexpensive to install and operate

AHOGS (Automated High Output Ground Seeding) Systems

- Ideal for strong convective storm attributes (turbulence)
- Delivers higher concentration of silver iodide
- Operated remotely – rapid release

Licensing and Permitting

- Operators are licensed and carry liability insurance
- Suspension criteria turns off program during high precip/flood conditions
- Though no CA state permit required, CEQA mitigated negative declaration will be conducted
- The National Oceanic and Atmospheric Administration (NOAA) also requires activity report about operation and the amounts of seeding material applied.

Cloud Rustling – Downwind Effects Misconception

- “Robbing Peter to pay Paul”
- Cloud seeding activates precipitation otherwise unavailable
- Long-term research (44+ studies) consistently shows no precipitation decreases; some downwind increases shown

Potential Environmental Effects

- Silver iodide is not soluble or biologically available
- 50 years of physical, biological, aquatic, soils and vegetation studies found:
  - Subtle or indiscernible effects
  - Not been measured above background, even after decades of operations
  - Potentially beneficial (more runoff)
- Strong studies with credible results and regulations reflect recent research

Public Health Protection

- Silver Iodide (AgI)
- Silver Concentrations
  - EPA drinking water quality 0.1 mg/L
  - U.S. Public Health Service level 0.05 mg/L
  - Seeded rainfall is 0.1 mcg/L or 1000 times less than EPA standard

Why consider cloud seeding in the Santa Ana River Watershed?

Precipitation – and flows in the Santa Ana River – have been trending down

- Cloud seeding increases precipitation (with an emphasis as snow in upper elevations)
- Produces a local supply
- Potential to reduce the use of imported water

Dry years and droughts occur

- Cloud seeding works in both dry and wet years

Cost effective

- Costs for 8%-11% increase in streamflow is a fraction of the cost of imported water

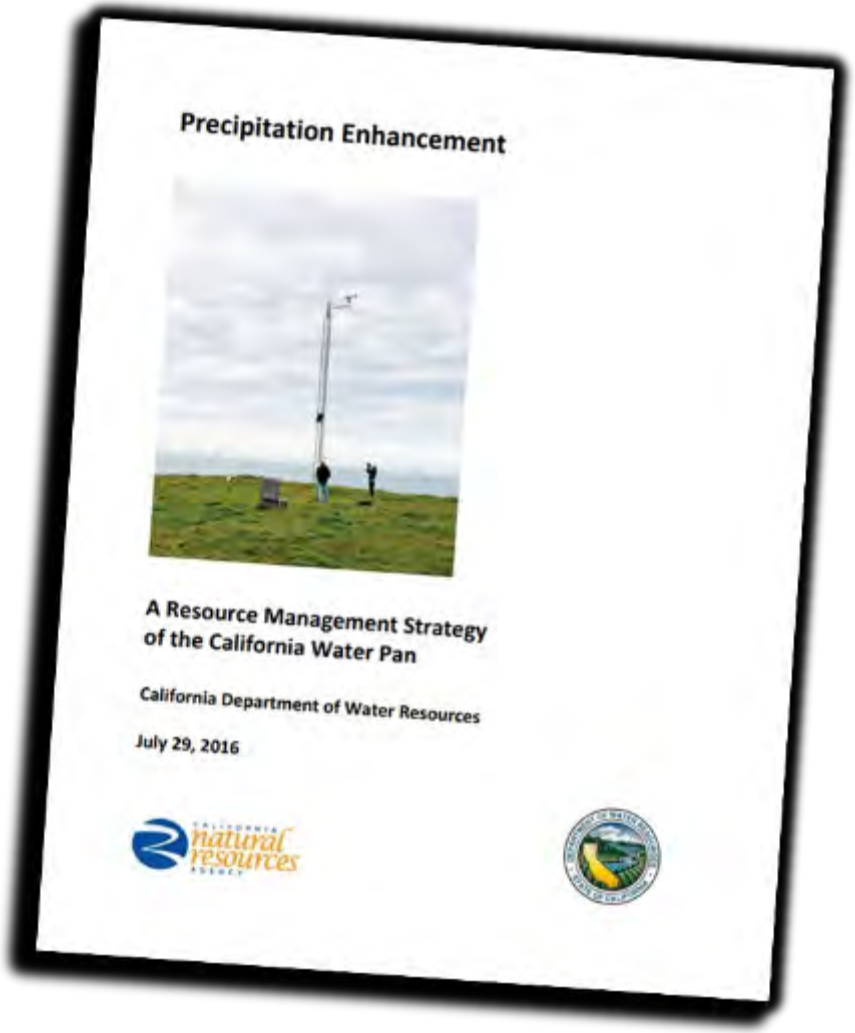
Supports local water storage

- Natural infiltration
- Takes advantage of existing stormwater capture infrastructure

Water Rights

- DWR “Precipitation Enhancement Report” (2016):

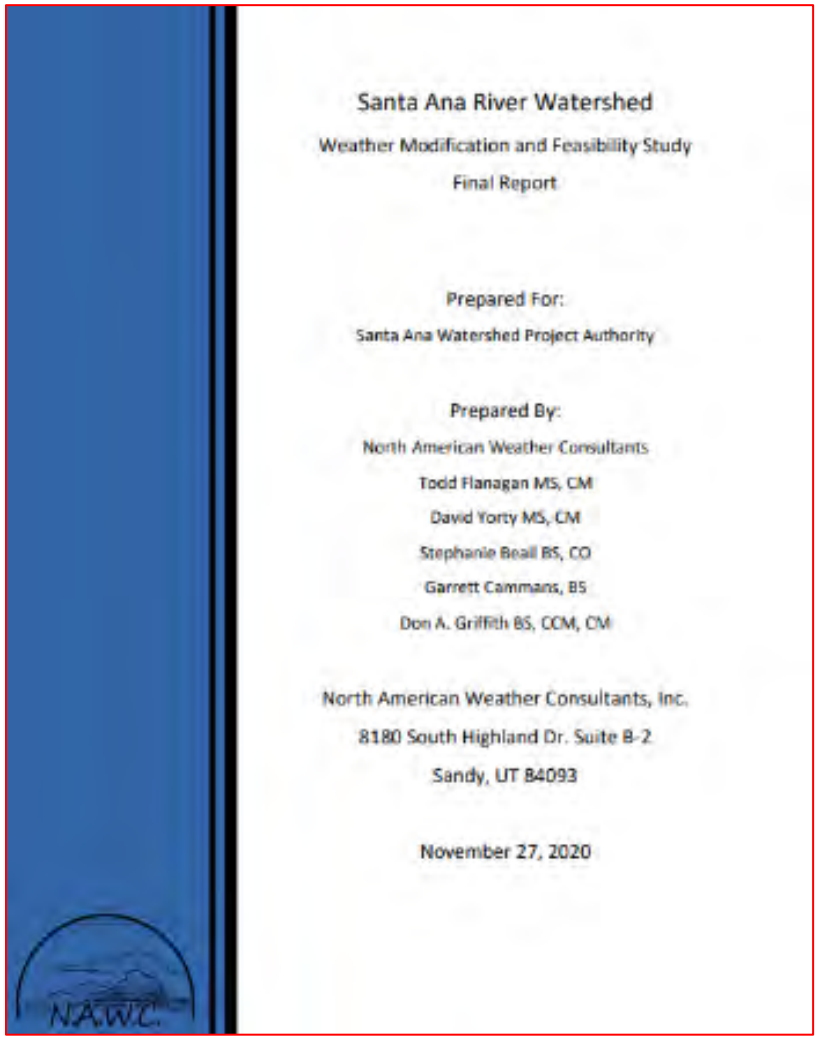
  “State law says that water gained from cloud seeding is treated the same as natural supply in regard to water rights.”



2020 Feasibility Study Outcomes

- Finding:
  - …the proposed cloud seeding program would be both technically and economically feasible…

- Pilot Program (annual basis)
  - Cost: $250,000
  - Benefits:
    - Streamflow increase = 8,200 AF
    - Percent increase in streamflow = 8%
  - Cost per acre-foot (AF) = ~$25 /AF


Santa Ana River Watershed

Weather Modification and Feasibility Study

Final Report

Prepared For:

Santa Ana Watershed Project Authority

Prepared By:

North American Weather Consultants

Todd Flanagan MS, CM

David Yorty MS, CM

Stephanie Beall BS, CO

Garrett Cammans, BS

Don A. Griffith BS, CCM, CM

North American Weather Consultants, Inc.

8180 South Highland Dr. Suite B-2

Sandy, UT 84093

November 27, 2020

N.A.W.C.

Feasibility Study (2020)

https://sawpa.org/latest-info/watershed-cloud-seeding-feasibility-study/

Feasibility Study Outcomes

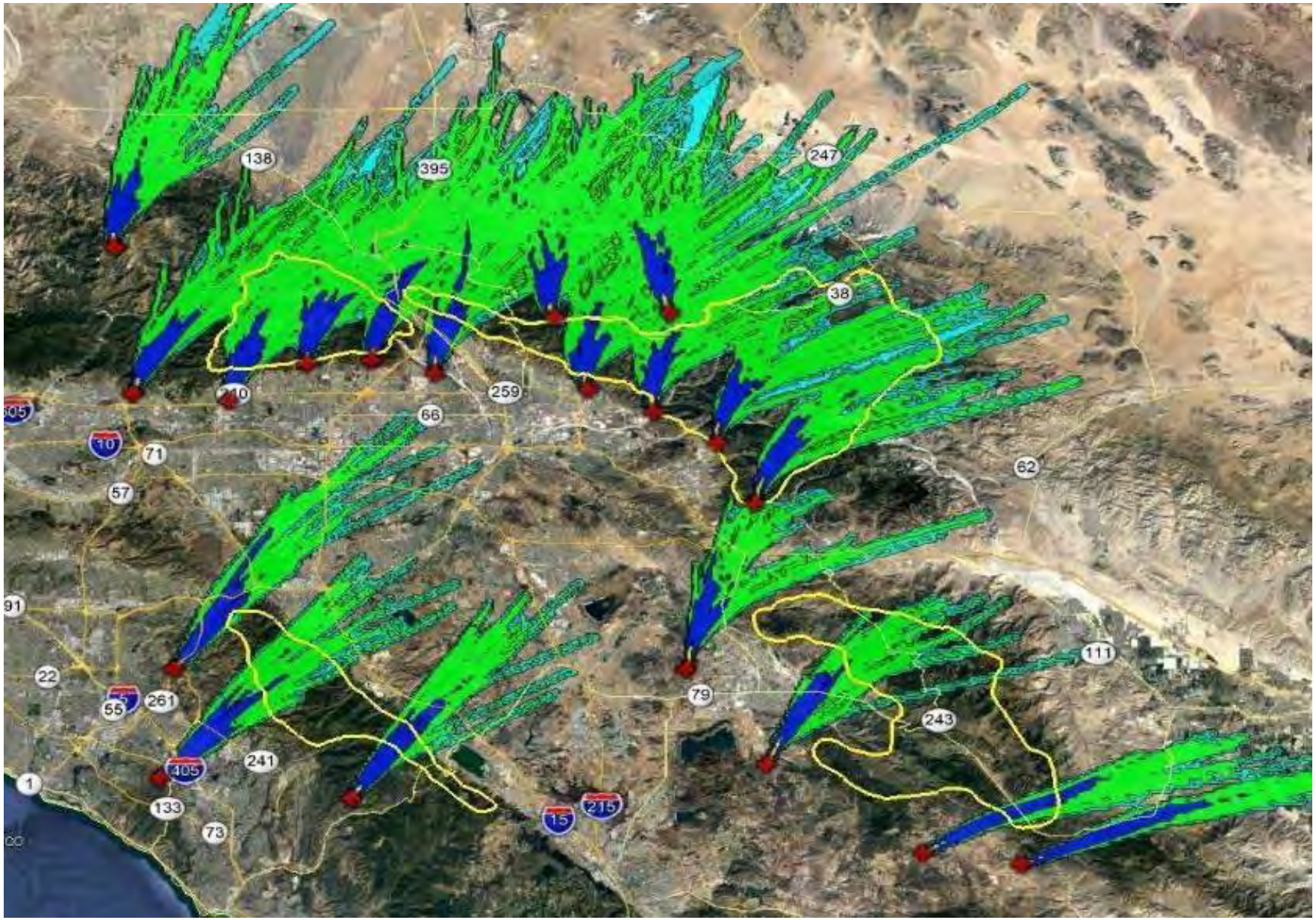
Ground Based Seeding Dispersion Model

4 seeding areas:

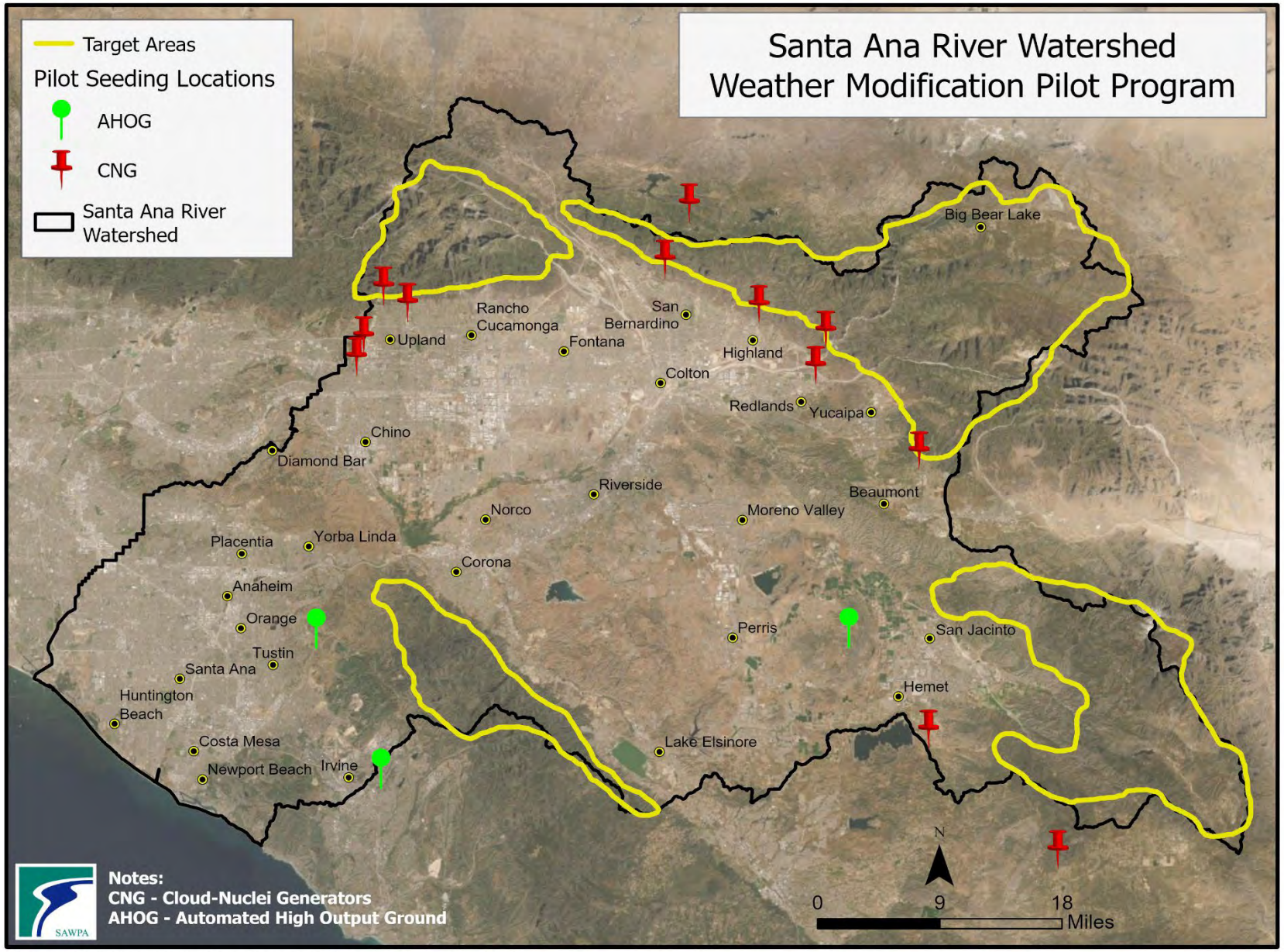
- NW
- NE
- SW
- SE

Included a number of ground sites in each area

Map reflects one of many projected seed plume scenarios



Seeding Site Locations

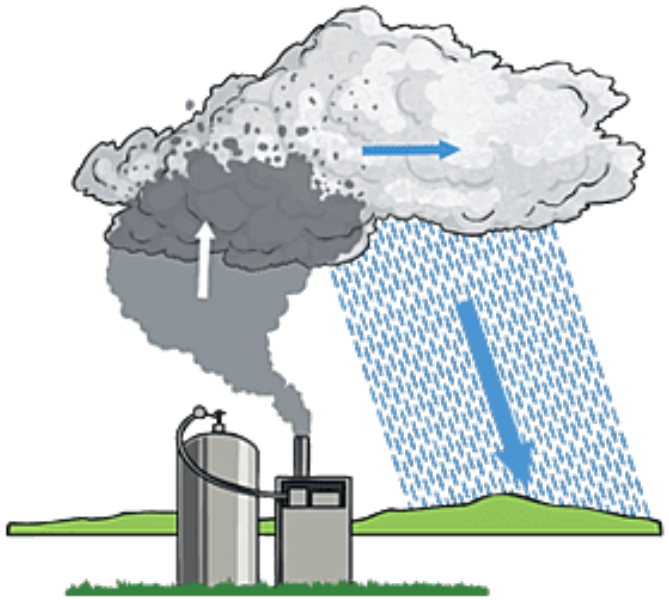


P:\projects\Mark_Norton\WeatherMod_21\WeatherMod2.aprx LoPilotProgram SW-3105

Operations Consultant Award

- Contract awarded on July 19th by SAWPA Commission:
  - North American Weather Consultants (NAWC), Sandy, UT ($1,061,912)
- A General Services Agreement and Task Order signed on July 25, 2022
- Kickoff meeting held on August 1, 2022

North American Weather Consultants

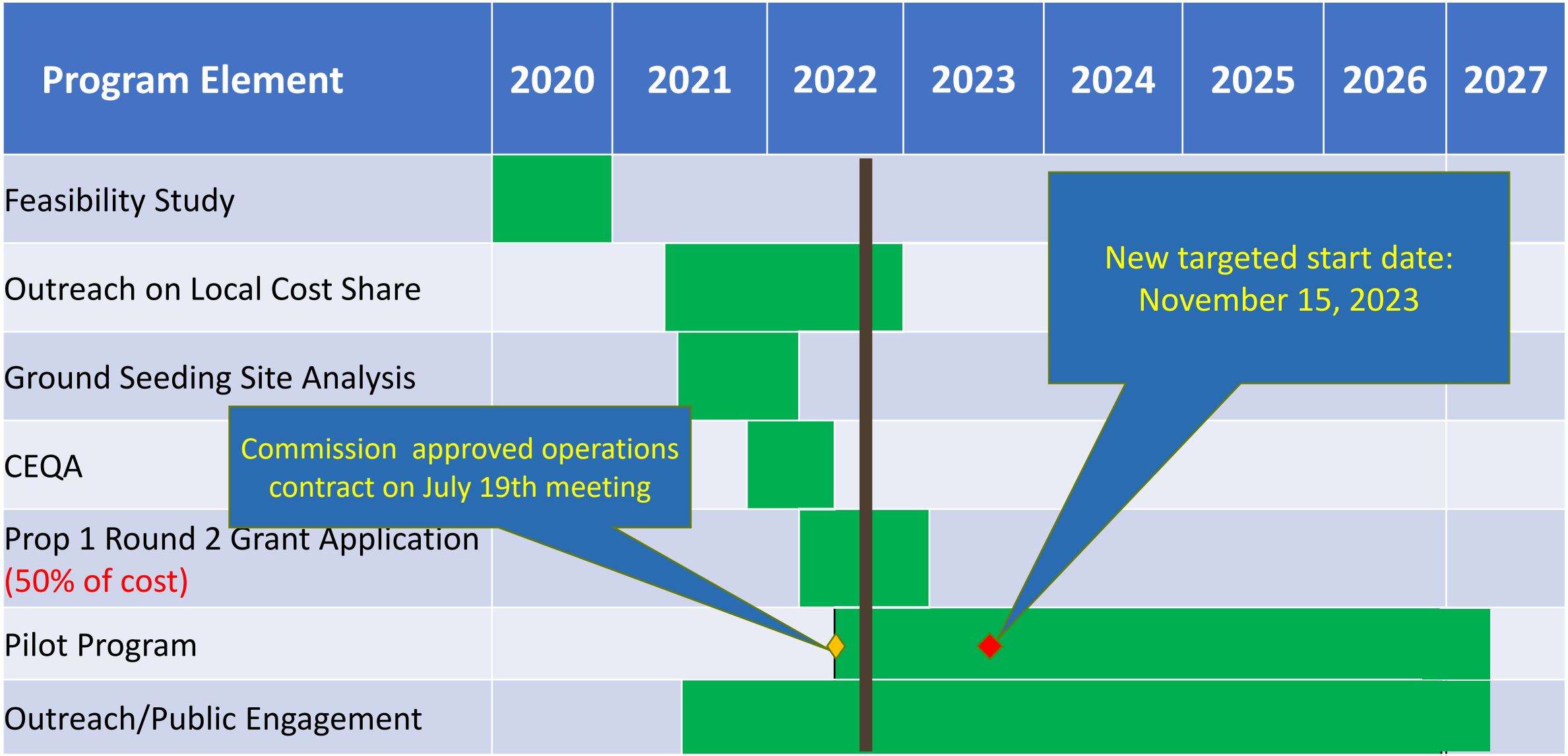


Operations Scope of Work

- Task 1 – Project Management and Administration
- Task 2 – Program Personnel
- Task 3 – Installation
- Task 4 – Land Lease/Operation Agreements
- Task 5 – Operations
- Task 6 – Equipment Maintenance
- Task 7 – Reporting & Invoicing
- Task 8 – Schedule

Duration: Four years over annual winter periods (Nov. 15 – Apr. 15)

Santa Ana River Weather Modification Pilot Project



Pilot Project Seeding Start Rescheduled to Nov. 2023

The decision to reschedule the start of cloud seeding was based on a review of project targets established to meet the Nov 2022 schedule. Specifically:

1. **Lease Agreements.** Execution of seeding site agreements with participating agencies require more time than anticipated, including scheduling board approvals where needed.
2. **Operations**. Questions arose by several agencies regarding the operations of the seeding units. Additional time is needed to address operations for these units.
3. **Propane Tanks.** Propane tanks of the appropriate size have been in short supply since 2021 and securing tanks for installation was in question.

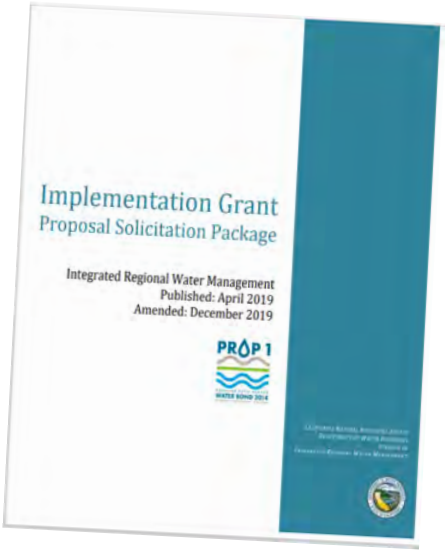
No additional costs are required for the November 2023 start date.

Proposition 1 Round 2 IRWM Implementation Grant Application - Status

- Application submitted for OWOW Call for Projects for Prop 1 Round 2 IRWM grant funding (50% of cost)
- SAWPA staff participated in Round 2 grant stakeholder budgeting and ranking process
- The Pilot was the top ranked project among 24 projects
- Next Step:
  - SAWPA staff will prepare detailed workplan, budget and schedule for DWR grant application due to DWR on Feb. 1, 2023.
  - DWR award announcement anticipated by Jun 2023 with contract execution with SAWPA anticipated in Oct. 2023

PROP 1

GOVERNOR GAVIN NEWSOM
WATER BOND 2014
RELIABILITY | RESTORATION | RESILIENCE



Santa Ana River Watershed Weather Modification – Pilot Validation

- Postponement of start to Nov. 2023 was acceptable to Desert Research Institute (DRI)
- DRI $155,000 validation support estimate remained the same
- Additional time can be used for preparation of validation tasks
- General Services Agreement and Task Order was approved by the SAWPA Commission on October 18, 2022.

DRI
Desert Research Institute

Recommendation

Staff recommends that the OWOW Steering Committee receive and file this status report on the Santa Ana River Watershed Weather Modification Pilot Project.