

Santa Ana River Watershed Weather Modification Pilot Program Status Report

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Santa Ana Watershed Project Authority
Item No. 6.C

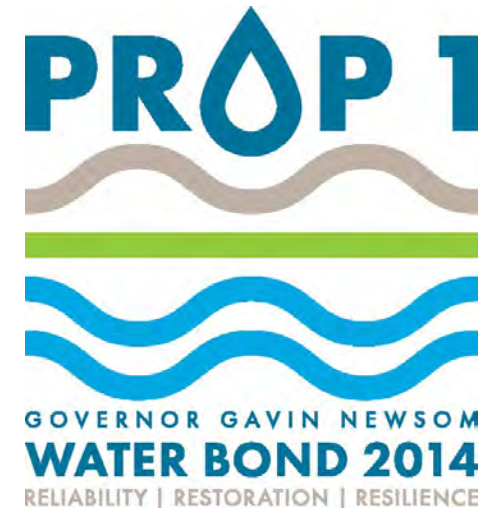


Pilot Program Schedule

Program Element	2020	2021	2022	2023	2024	2025	2026
Feasibility Study	Active	Completed	Completed	Completed	Completed	Completed	Completed
Outreach for Local Funding Commitments	Completed	Active	Active	Completed	Completed	Completed	Completed
Ground Seeding Site Analysis	Completed	Active	Completed	Completed	Completed	Completed	Completed
CEQA	Completed	Completed	Active	Completed	Completed	Completed	Completed
Grant Application	Completed	Completed	Active	Completed	Completed	Completed	Completed
Commence 4 Year Pilot Program	Completed	Completed	Completed	Active	Active	Active	Active
Outreach and Public Engagement	Completed	Active	Active	Active	Active	Active	Active

Proposition 1 Round 2 IRWM Implementation Grant Application - Status

- SAWPA staff is waiting for Proposal Solicitation Package (PSP) for this round of grant funding from DWR
- Next Steps:
 1. SAWPA completes Call for Projects info form submittal for Weather Modification Pilot by March 2022.
 2. Seek 50% local share commitment to match 50% grant request by March/April 2022
- Typically, DWR does not require completion of pilot CEQA until 18 months after grant



Ground Seeding Locations Analysis Status - Ongoing

Consultant: North American Weather Consultants

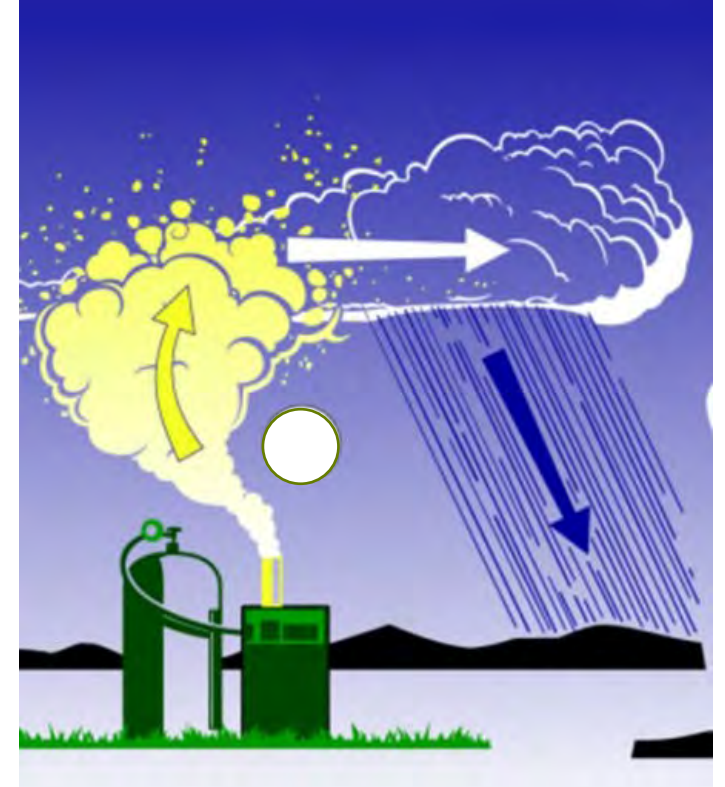
Cost: \$15,400

Scope:

- Select locations for ~13 ground seeding sites
- Contact public water agencies to ensure that operations from the location are feasible
- Work with public water agencies to operate units based on agreements with a licensed weather modification operator

Status:

- Project summary report detailing the locations identified by consultant expected mid-Dec.



California Environmental Quality Act – Mitigated Negative Declaration Analysis - Status

- **October 21, 2021** Agreement and task order were signed by SAWPA and CEQA Consultant, Catalyst Environmental Solutions
- **Nov. 1, 2021:** Held kickoff meeting with Catalyst Environmental Solutions
- **Dec. 15, 2021** Project Description, alternatives and phasing is expected to be completed
- **Feb. 16, 2022** Draft Initial Study expected to be completed
- **Jun. 14, 2022** CEQA Mitigated Negative Declaration to be complete
- **North American Weather Consultants** will assist CEQA consultant to provide context, feedback, and assistance.



Outreach Presentations and Funding Support

Approach:

- Contacted 60+ water agencies/departments and other organizations:
 - Provided information about the pilot program
 - Requested to make presentations to boards

Status:

- 10+ Presentations made/scheduled
- Funding commitments for weather modification pilot:
 - Chino Basin Water Conservation District \$20,000
 - San Antonio Water Agency \$5,000
 - City of Corona \$5,000
- 12+ board presentations have been scheduled over the next two months



Cloud Seeding Pilot Program Questions

- Safety of Silver Iodide
- Operators are licensed and carry liability insurance
- Operations
- Suspension criteria
 - Turn off program during high precipitation (avoid flood conditions)
 - Turn off program due to burn scars from wildfires
- Permitting
- Outreach is critical



General Level of Interest and Support (regardless of cost share)

General Outcomes:

- Most agencies after hearing the presentation are supportive of the pilot program
- We do hear questions and some reservations about the efficacy of cloud seeding in our region

Comments on Cost Share:

- They are interested in the funding commitments by other agencies
- Many are suggesting that financial support be provided by SAWPA member agencies

Other Questions:

- What is the direct benefit to their agency?



Questions and/or Concerns

How much of the new water can be captured and recharged from the 8100 AF?

- TBD in pilot (dependent on stormwater capture facilities by agency)

What amount of demand could this serve if it was 100%?

- 16,000 households (based on 0.5 AF per year per household)

What is the fate of the acetone in the cloud seeding operations?

- When burned, acetone breaks down immediately to water vapor and CO₂ (negligible amount).



Questions and/or Concerns

Why is only a ground-based system being considered for the four-year pilot rather than both aerial seeding and ground-based seeding?

- Ground only operations will already have a sizable impact on precipitation, at a significantly reduced cost and a higher benefit to cost
- A simpler and more cost-effective seeding approach is recommended initially for evaluation
- Aerial program involves more complex operations
- All four target areas are not optimal for aerial seeding
- One seeding mode that benefits all designated target areas is recommended for pilot



Questions on Previous Cloud Seeding Efforts

What were the findings and outcomes of the previous cloud seeding study in the region (San Bernardino Mountains in 1976-1978 operated by SBVMWD)?

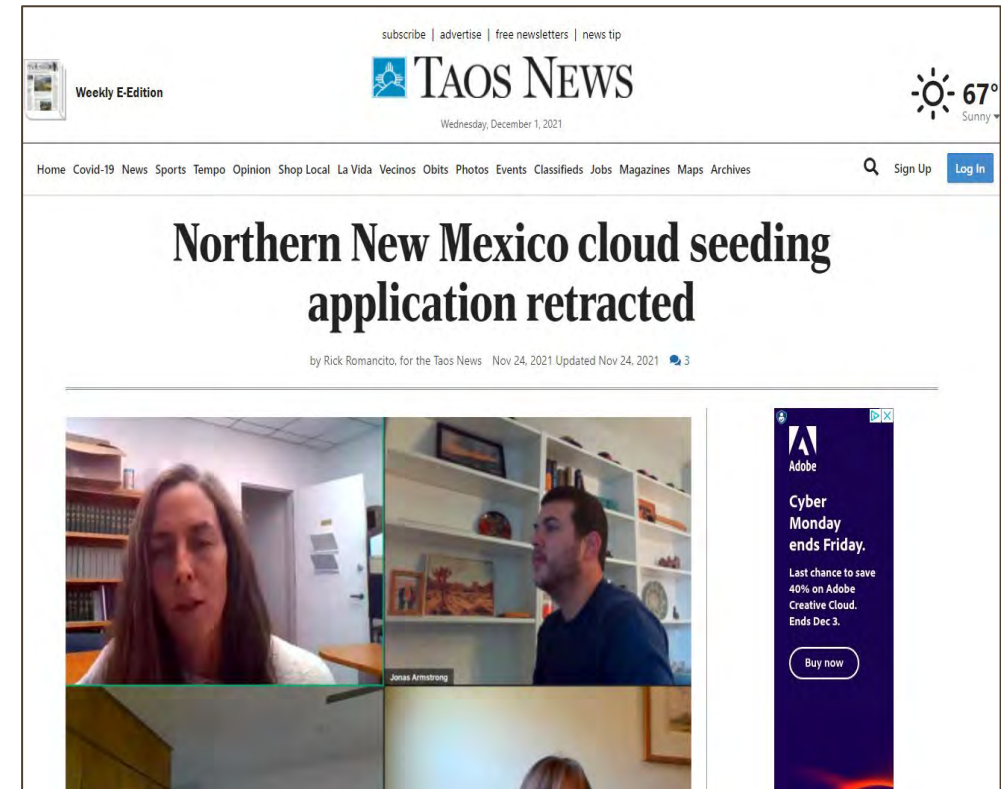
- SAWPA Staff interviewed three individuals involved in the 1970s study:
 - They believe the program was having positive benefits
 - They concurred that the current program makes sense considering impacts of dry years and drought
 - Reasons for discontinuing the program was due to revenue impacts based on Pro 13 and were not based on effectiveness
- Other considerations for current study:
 - Storm forecasting has greatly improved
 - Analytics of pilot results are much more advanced
 - Better validation processes are available
 - Studies of other U.S. cloud seeding programs in US demonstrate that a 5-15% benefit in increased snowpack can be achieved



Questions on Acceptance

If other cloud seeding programs are being opposed (i.e., New Mexico) why start one for this watershed?

- We conducted a feasibility study and are proposing a pilot study
- Our outreach is being conducted early and will run throughout the pilot
- Science and related information is being shared with stakeholders, public, and media
- However, the program will likely have some who oppose the pilot even with outreach
- The goal of the pilot is to demonstrate that the program is safe, cost effective, and has broad support



Suggestions/Ideas

- Conduct additional outreach to:
 - Native American Tribes
 - Regulatory agencies
 - Adjoining watersheds
 - Ski resorts
- Provide material to SAWPA member agencies outreach staff
- SAWPA member agency staff could attend SAWPA briefing meetings



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Recommendation

- Staff recommends that the SAWPA Commission receive and file this status report on ongoing planning and outreach activities associated with the Santa Ana River Watershed Weather Modification Pilot Program

Brine Line 2012: Reach V (TVRI) Sheet 15 of 15





Looking South along Pasadena Street



Looking West



Looking North along Pasadena Street