San Gorgonio Pass Water Agency

DATE: February 13, 2023

TO: Board of Directors

FROM: Lance Eckhart, General Manager

SUBJECT: Approval of the Right of Entry Agreement for the Santa Ana River Weather Modification Pilot Program through the Santa Ana Watershed Project Authority

RECOMMENDATION

Staff recommends the Board of Directors approve the Right of Entry Agreement between the San Gorgonio Pass Water Agency, Santa Ana Watershed Project Authority (SAWPA), and North American Weather Consultants to allow the installation, operation, and maintenance of cloud seeding equipment located at the Mountain View Turnout Facility.

PREVIOUS CONSIDERATION

- Board of Directors – January 24, 2021: Santa Ana River Weather Modification Pilot Program presented as a receive and file item.

BACKGROUND

Cloud seeding is the process of adding a material such as silver iodide or potassium iodide into an existing cloud to cause water vapor to condense and fall as rain or snow. In November 2020, SAWPA completed a Weather Modification and Feasibility Study, which concluded that cloud seeding is feasible in the Santa Ana River Watershed. The SAWPA Commission has authorized the development of a multi-year pilot-scale field study intended to demonstrate the effectiveness of cloud seeding in the Watershed. SAWPA staff and North American Weather Consultants (NAWC) have identified multiple locations along the foothills in the Santa Ana River Watershed where this pilot project would be best utilized for the ground seeding equipment. Staff has worked with SAWPA and NAWC staff to identify land available at the Mountain View Turnout Facility property for cloud seeding equipment. The Agency owns this parcel of land, and it would be ideal for ongoing operations and maintenance of the cloud-seeding equipment.

FISCAL IMPACT

The San Gorgonio Pass Water Agency previously contributed $20,000 in 2022 toward the Santa Ana River Weather Modification Pilot Program. SAWPA intends to apply to the DWR Proposition 1, Round 2 grant funding requesting 50% of the overall program cost. The remaining 50% of funding is provided by other funding partners throughout the Santa Ana River Watershed. At this time, no additional funds are being requested.

ACTION

Approve the Right of Entry Agreement for the installation, operations, and maintenance of cloud seeding equipment at the Mountain View Turnout Facility in support of the Santa Ana River Weather Modification Pilot Program.

ATTACHMENTS

Right of Entry Agreement

RIGHT OF ENTRY AGREEMENT

This Right of Entry Agreement ("Agreement") is entered into this ___ day of January, 2023 by and between the San Gorgonio Pass Water Agency, a public agency ("Permittor") on the one hand; and the Santa Ana Watershed Project Authority, a public agency and the North American Weather Consultants, Inc., a Utah corporation and consultant to SAWPA (collectively, "Permittees") on the other hand.

RECITALS

A. Permittor owns that certain real property located at _____ ("Property"); and

B. Permittees desire to obtain Permittor's permission to enter onto certain portions of the Property to locate and operate a silver iodide nuclei generator in connection with the Santa Ana River Watershed Weather Modification Pilot Project ("Activities").

NOW, THEREFORE, the parties agree as follows:

1. Temporary Right of Entry. Subject to the terms and conditions set forth in this Agreement, Permittor hereby grants to Permittees the right to enter onto the Property for the purpose of performing the Activities and for no other purpose. Permittees shall perform the Activities at their sole cost and expense. Nothing in this Agreement shall be deemed to provide any permission, or other right, of Permittees to conduct any other activity on or about the Property. Permittees shall provide Permittor notice of entry 24 hours prior to entering the Property. Said notice shall be given to the following Permittor contact:

Contact Name: Lance Eckhart, General Manager/Chief Hydrogeologist
Phone Number: (951) 845-2577

Permittees shall make arrangements in advance with the Permittor contact for entry and access to the Property during weekdays between _____ a.m. and _____ p.m. at a time mutually convenient for both parties.

2. Term. Unless earlier terminated as provided herein, the temporary right of entry provided by this Agreement shall be in effect from January _____, 2023 to _____, 2023.

3. Indemnification/Hold Harmless. Permittees hereby agree to indemnify, defend, and hold harmless Permittor from all actions, liabilities and damages to property or injuries to persons which may be caused by Permittees' acts or omissions pursuant to this Agreement, whether such damage shall accrue or be discovered before or after termination of this Agreement and the temporary right of entry. Permittees, specifically, and not by way of limitation agree that they shall be responsible for any and all repair,

maintenance and cleanup in connection with the Activities. The indemnity and other rights afforded to Permittor by this section shall survive the revocation or termination of this Agreement and the temporary right of entry.

4. Compliance with Laws/Permits. Permittees shall comply with all federal, state and local laws and regulations. Without limiting the generality of the foregoing, Permittees, at their sole cost and expense, shall obtain any and all permits which may be required by any law or regulation in connection with the Activities.

5. Not Real Property Interest. It is expressly understood that this Agreement and temporary right of entry do not in any way whatsoever grant or convey any permanent easement, lease, fee or other interest in the Property to Permittees. This temporary right of entry is not exclusive.

6. Revocation and Termination. Notwithstanding any sums expended by Permittees in furtherance of this temporary right of entry, the temporary right of entry granted herein is revocable and may be terminated by Permittor in accordance with the terms of this Agreement. This Agreement and temporary right of entry may be terminated at any time by either party upon 10 day's prior notice in writing to be submitted to the other party. In cases of an emergency or a breach of this Agreement by Permittees, this temporary right of entry and Agreement may be terminated by Permittor immediately.

7. Restoration of the Property. Upon the termination or revocation of this Agreement and temporary right of entry, Permittees shall, at their own cost and expense, restore the Property to the same condition in which it was prior to Permittees' entry. In case Permittees shall fail to restore the Property to its prior condition within 10 days after the effective date of the termination, Permittor may proceed with such work at the expense of Permittees. In the event of an emergency or breach which results in termination of this Agreement, Permittor shall provide a reasonable period of time following said termination to remove items from the Property and to restore the Property as required herein.

8. Continuing Liability. No termination of this Agreement and temporary right of entry shall release Permittee from any liability or obligation hereunder resulting from any acts or omissions happening prior the termination of this Agreement and temporary right of entry.

9. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

10. Authority. The individuals executing this Agreement on behalf of their respective parties represent that they are authorized to do so by requisite action of their respective parties.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the date first written above.

SAN GORGONIO PASS WATER AGENCY

By: _____
Lance Eckhart
General Manager

Date:_____

SANTA ANA WATERSHED PROJECT AUTHORITY

By: _____

Its: _____

Date: _____

NORTH AMERICAN WEATHER CONSULTANTS, INC.

By: _____

Its: _____

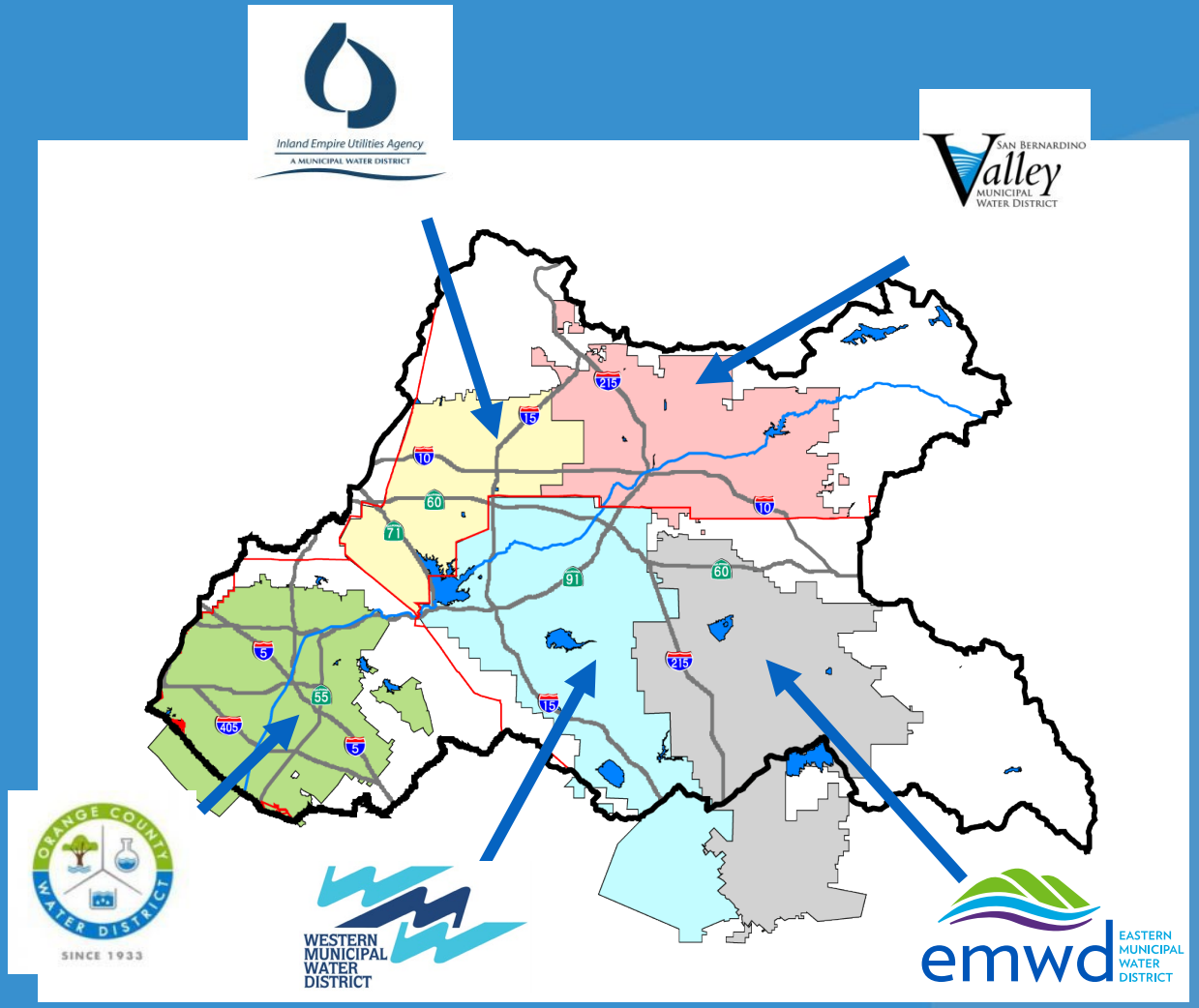
Date: _____

Santa Ana Watershed Weather Modification Pilot Program

Mark Norton, Special Projects Mgr.
Santa Ana Watershed Project Authority

SAWPA

SAWPA: Joint Powers Authority with Five Member Agencies



Stakeholders:

- 97 Water-related Agencies
- 4 Counties
- 63 Cities
- State, environmental, and regulatory agencies
- Federal agencies
- Other special districts
- Special interest groups

Pilot Program Support

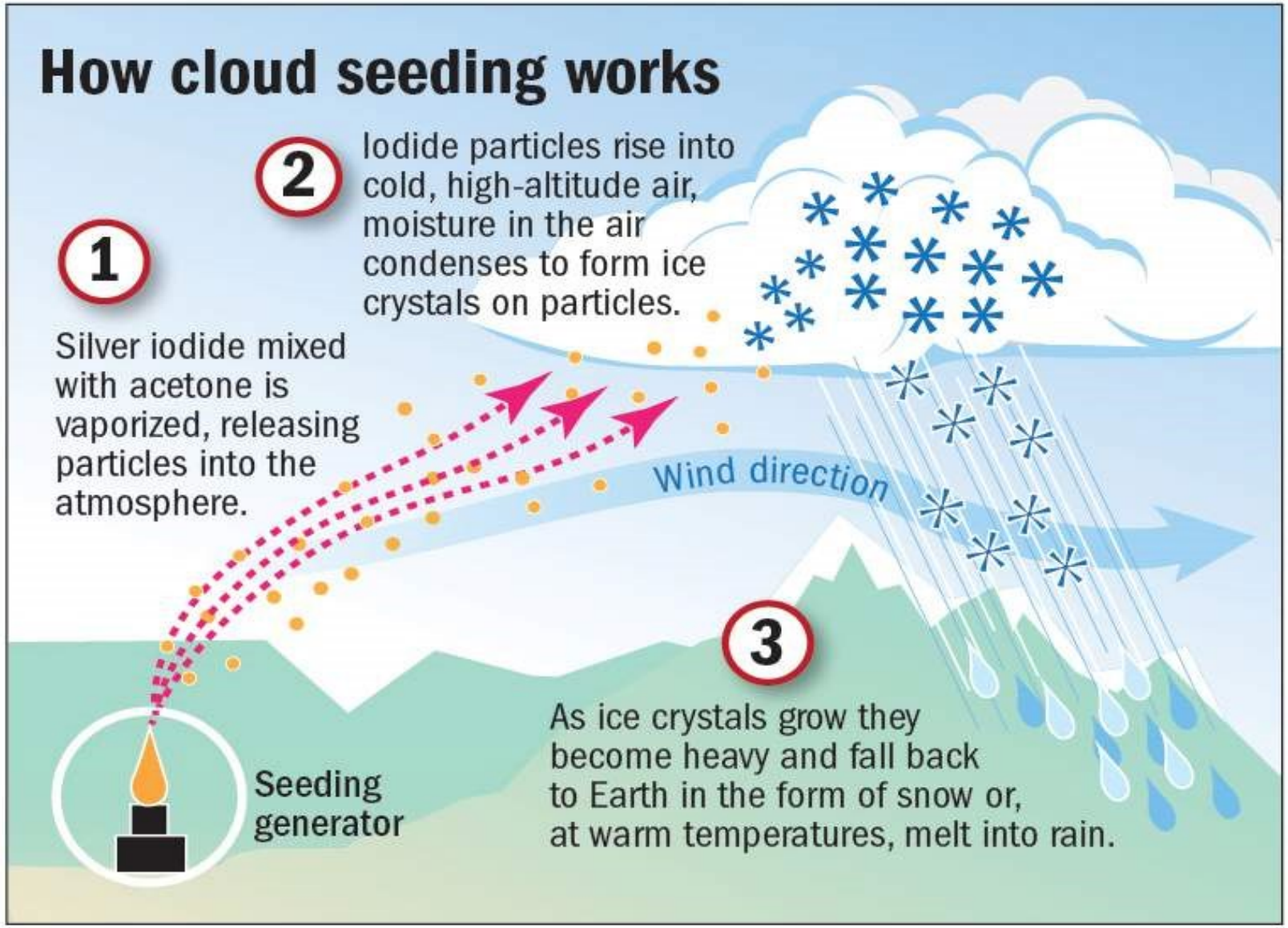
- Prop 1 Round 2 Grant: Cover 50% of cost
- Local cost share (50% match)
  - SAWPA member agencies
  - Other local agencies
- Other Participating Agencies
  - Chino Basin Water Conservation District
  - San Gorgonio Pass Water Agency
  - Big Bear Lake Dept of Water & Power
  - Big Bear City Community Services District
  - Lake Elsinore & San Jacinto Watersheds Authority
  - City of Santa Ana
  - San Antonio Water Company
  - City of Corona

PROP 1

GOVERNOR GAVIN NEWSOM

WATER BOND 2014

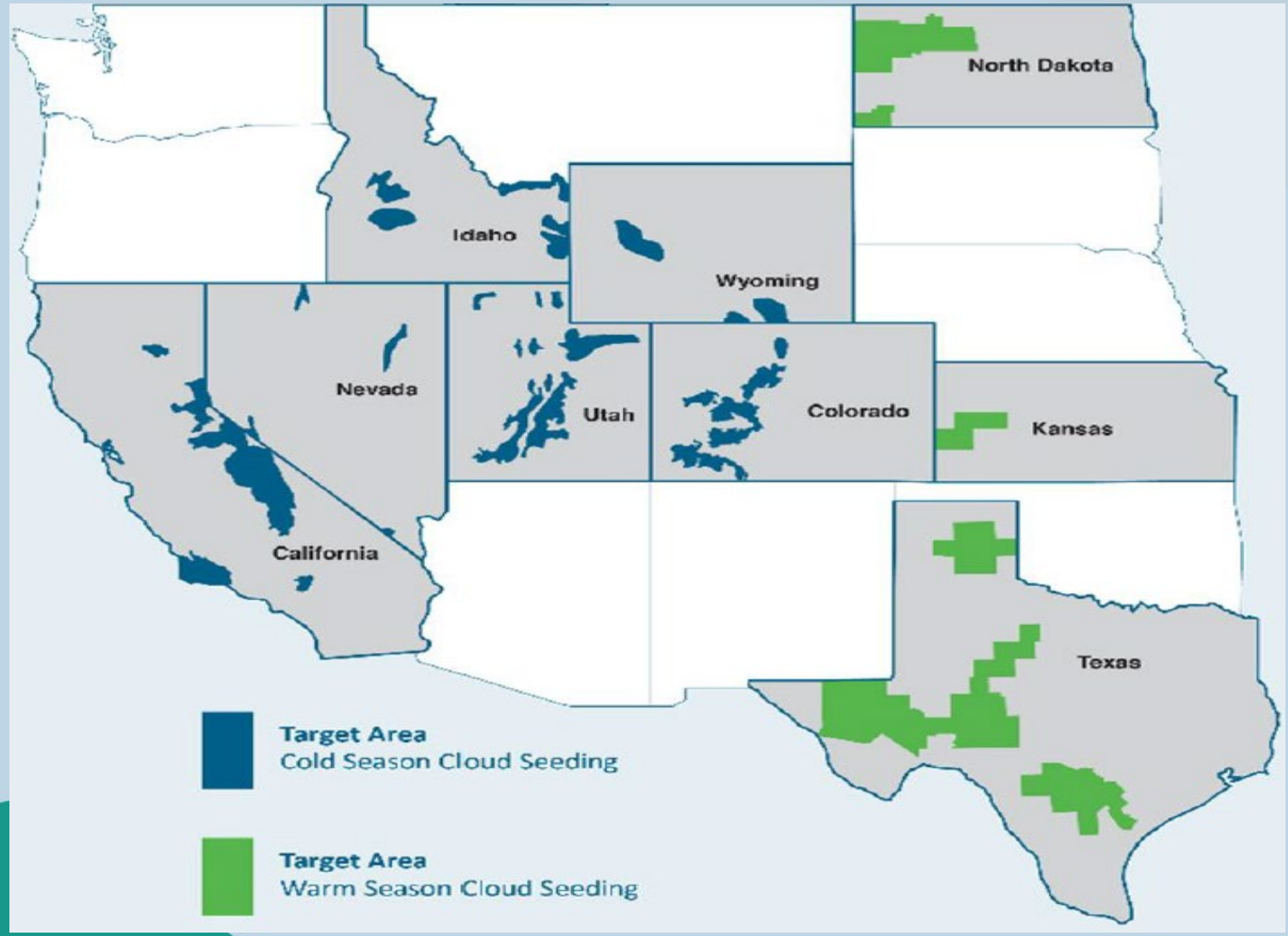
RELIABILITY | RESTORATION | RESILIENCE



Source: The Fact Site

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 Water District
- CA DWR
  - Cloud seeding is a “safe and effective means of augmenting local water supplies."



Source: North American Weather Modification Council

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 is required
- There have been no successful legal challenges to any operation in US for over 50 years

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
  - Potentially beneficial (more runoff)
- 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

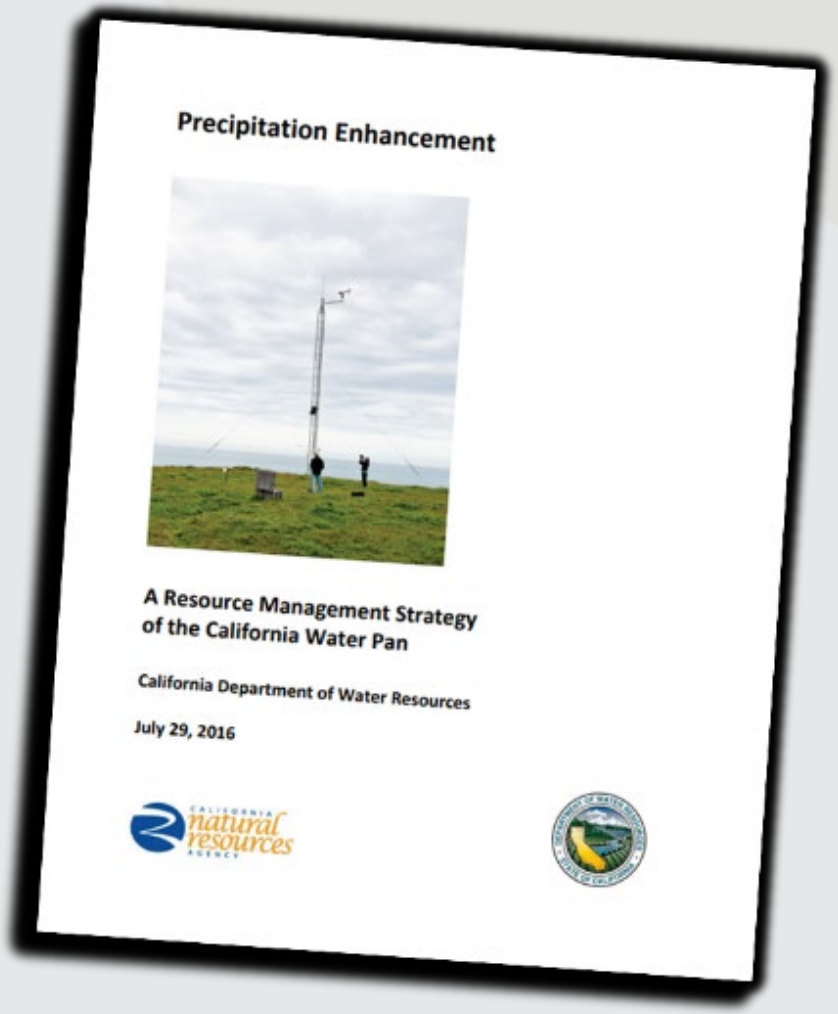
Cloud Rustling – Downwind Effects Misconception

- “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

Water Rights

- DWR “Precipitation Enhancement Report” (2016):

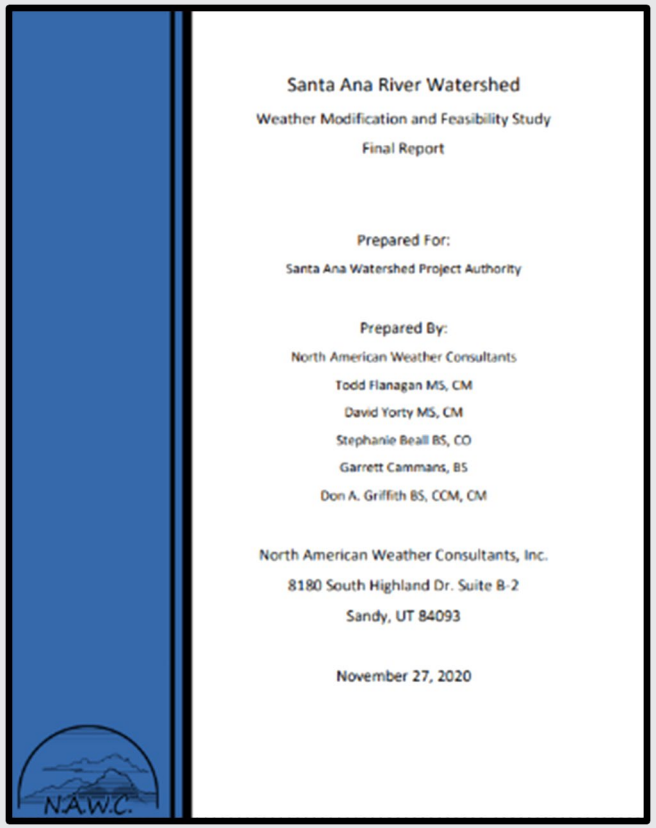
  “State law says that water gained from cloud seeding is treated the same as natural supply in regard to water rights.”



2020 Feasibility Study Outcomes

- Finding:
  - …the proposed cloud seeding program is 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



Feasibility Study (2020)

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

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

Feasibility Study Outcomes

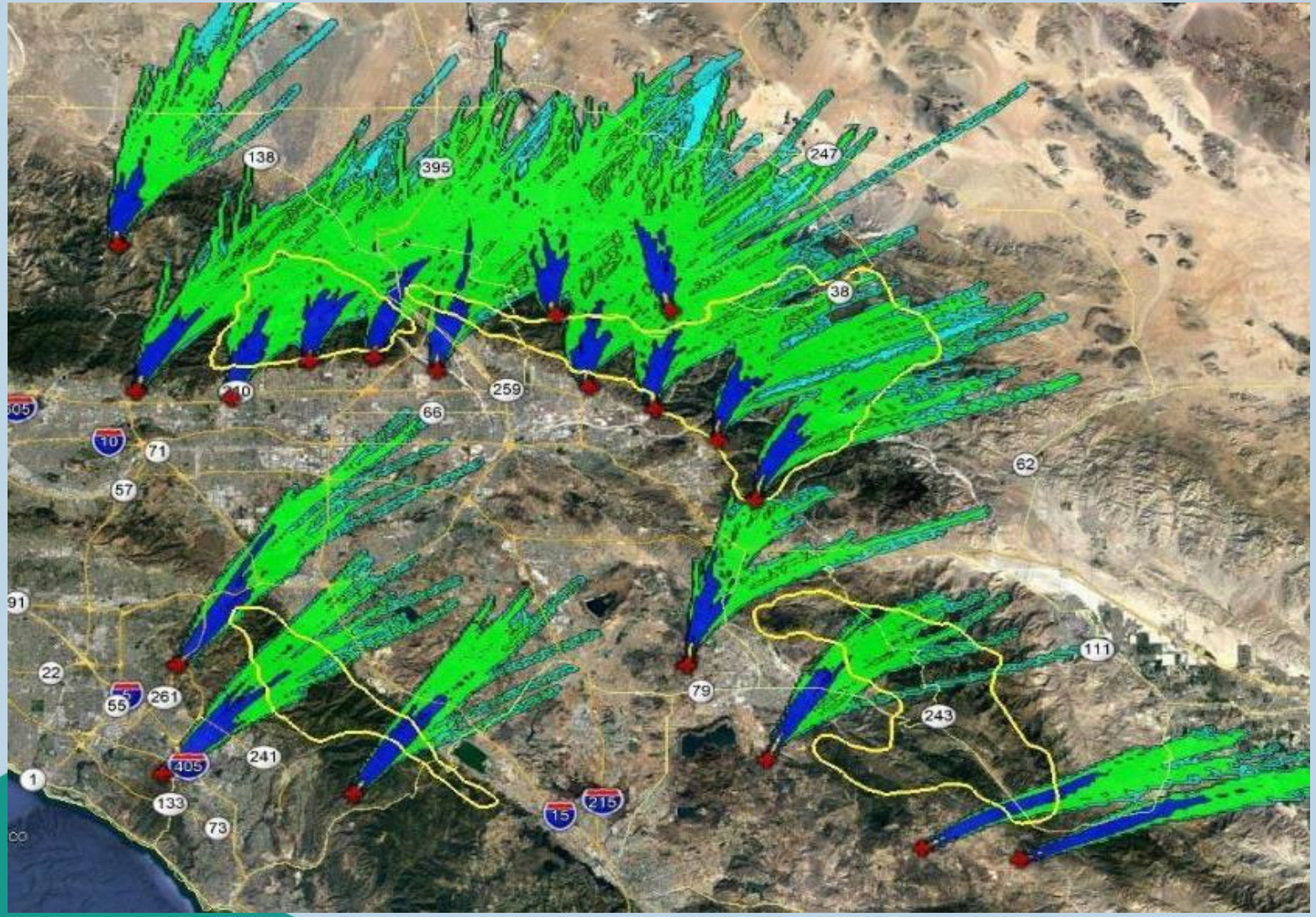
Ground Based Seeding Dispersion Model

4 seeding areas:

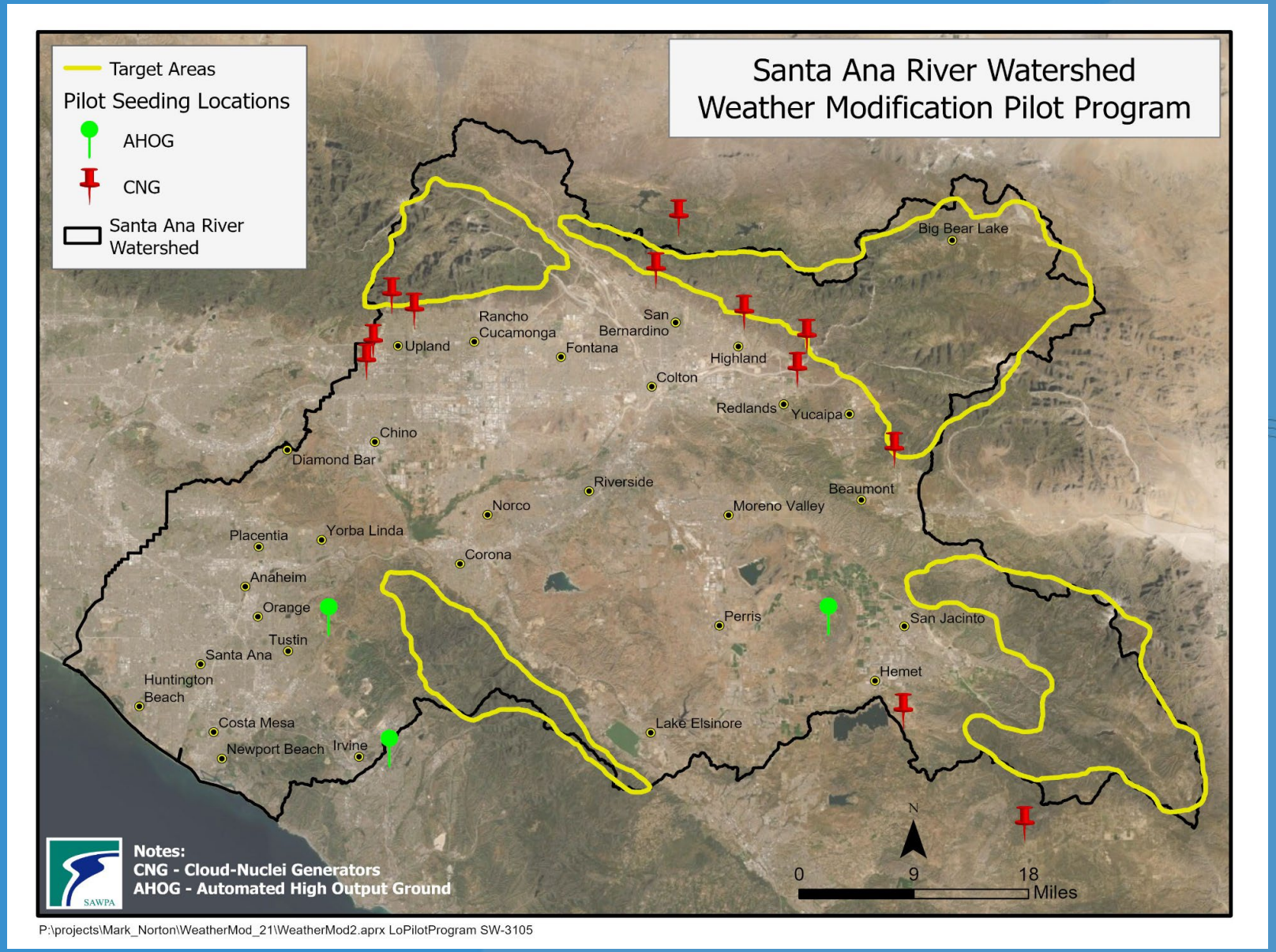
- NW
- NE
- SW
- SE

Included several ground sites in each area

Map reflects one of many projected seed plume scenarios

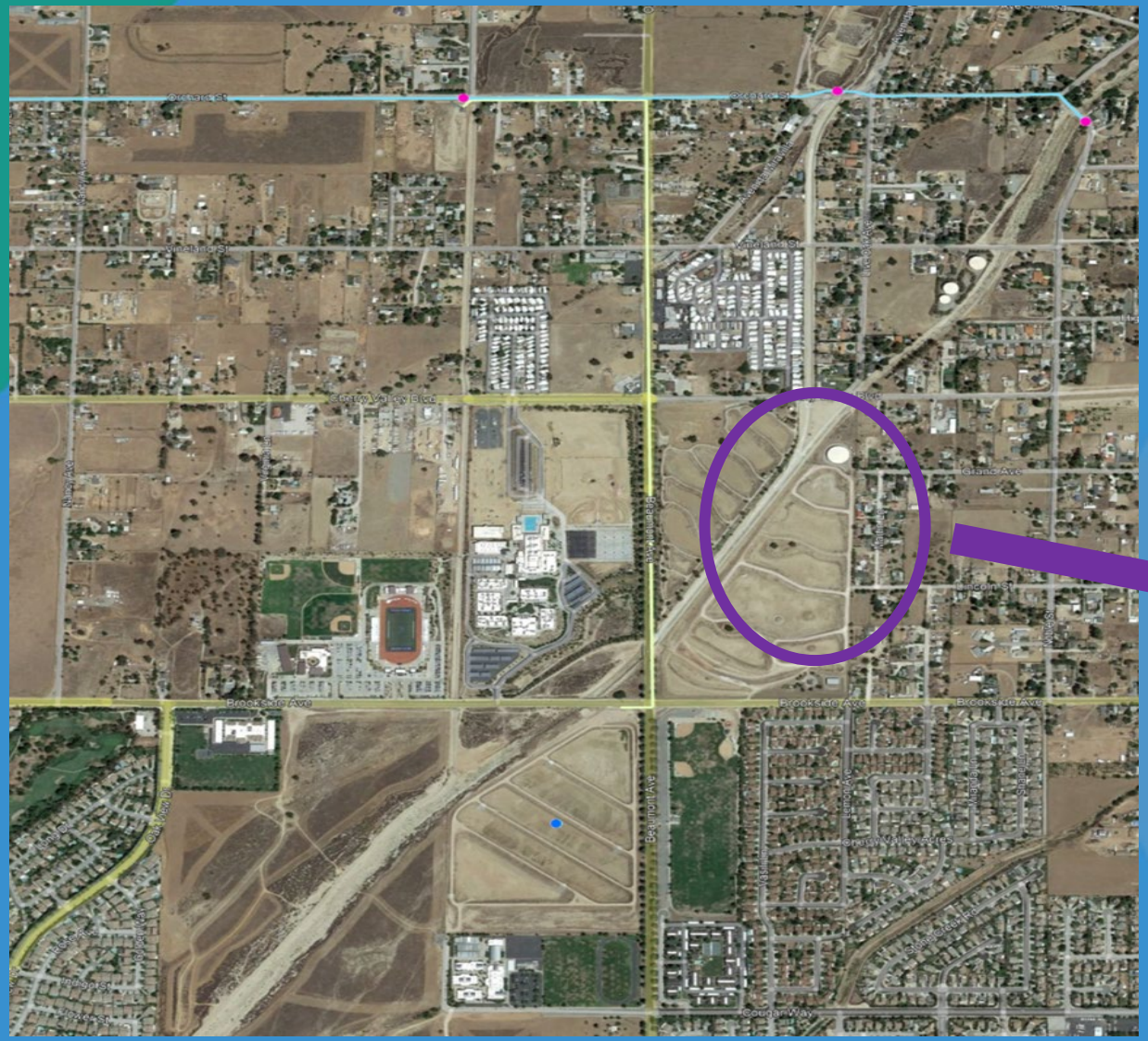


4 Year Pilot Program Proposed - Seeding Site Locations



Proposed Location of Seeding Site for SGPWA

BCVWD Stormwater Capture Project



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

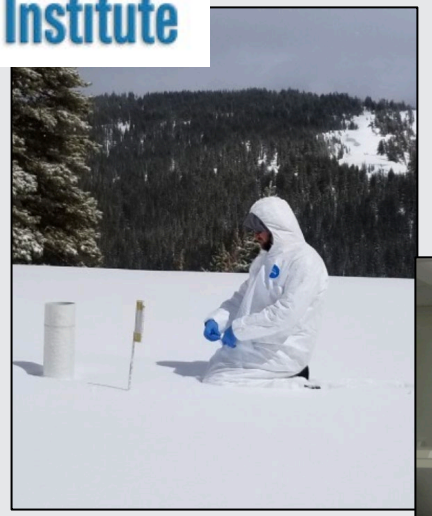
Supports local water storage

- Natural infiltration
- Takes advantage of existing stormwater capture infrastructure

Santa Ana River Watershed Weather Modification – Pilot Validation

- Verify increases in precipitation
  - Compare Target areas
  - 3-4 years needed
- Evaluate increases by areas in watershed
- Benefit/Cost evaluation
- Review of operations
- Review of suspension criteria

DRI
Desert Research Institute



Four Year Pilot Project Schedule

Program Element	2020	2021	2022	2023	2024	2025	2026
Feasibility Study							
Outreach: Local Cost Share for Prop 1 Round 2 Grant							
Ground Seeding Site Analysis							
CEQA							
DWR Prop 1 Round 2 Grant Application and Award							
Operations contractor executes local site agrmts and seeding units installed							
Pilot Program							
Outreach/Public Engagement