SANTA ANA WATERSHED PROJECT AUTHORITY

# Microsoft Dynamics GP Study and Support

Commission Meeting
Item Number 6.A
Dean Unger
IT Manager
May 21, 2024

# Recommendation

- It is recommended that the Commission receive and file the informational report on the Microsoft Dynamics GP replacement study and support.

# End of Life Software

- In 2023, Microsoft announced the support for Microsoft Dynamics GP software will end in January of 2028.
- SAWPA has been using Microsoft Dynamics GP accounting software since 2002.

# RFP issued for Study and Support

- SAWPA issued an RFP in February for a business study and recommendation for a new accounting software solution.
- A request to support the current Microsoft Dynamics GP accounting system was also included.
- Five vendors responded to the RFP.

# Proposal Ranking

| *Reviewer* | Alx Tel, Inc | Endeavor Solutions | Integrated Systems Solutions | KAT Enterpreise LLC | Oracle NetSuite |
|---|---|---|---|---|---|
| Dean | 60 | 94 | 83 | 73 | 91 |
| Karen | 63 | 90.5 | 80 | 69 | 87.5 |
| | | *Selected for Interview | *Selected for Interview | | *Selected for Interview |

# Interview Ranking and Costs

| *Reviewer* | Endeavor Solutions | Integrated Systems Solutions | Oracle NetSuite |
|---|---|---|---|
| Dean | 91.5 | 85 | 85 |
| Karen | 89.5 | 85 | 76.5 |
| | | | |
| *Cost* | $11,735.00 | $7,140.00 | $39,000.00 |

# Endeavour Solutions

# Timeline

| | May 21st - July 1st | 1st Qtr 2024-25 | 2nd Qtr 2024-25 | 3rd Qtr 2024-25 | 1st Qtr 2025-26 |
|---|---|---|---|---|---|
| OnBoard Support Service | | | | | |
| Business Process Study | | | | | |
| Report Finding to Commission | | | | | |
| Issue RFP for recommended Software and data migration | | | | | |
| Vendor Selection and Software Installation | | | | | |

# Questions?

# Thank You

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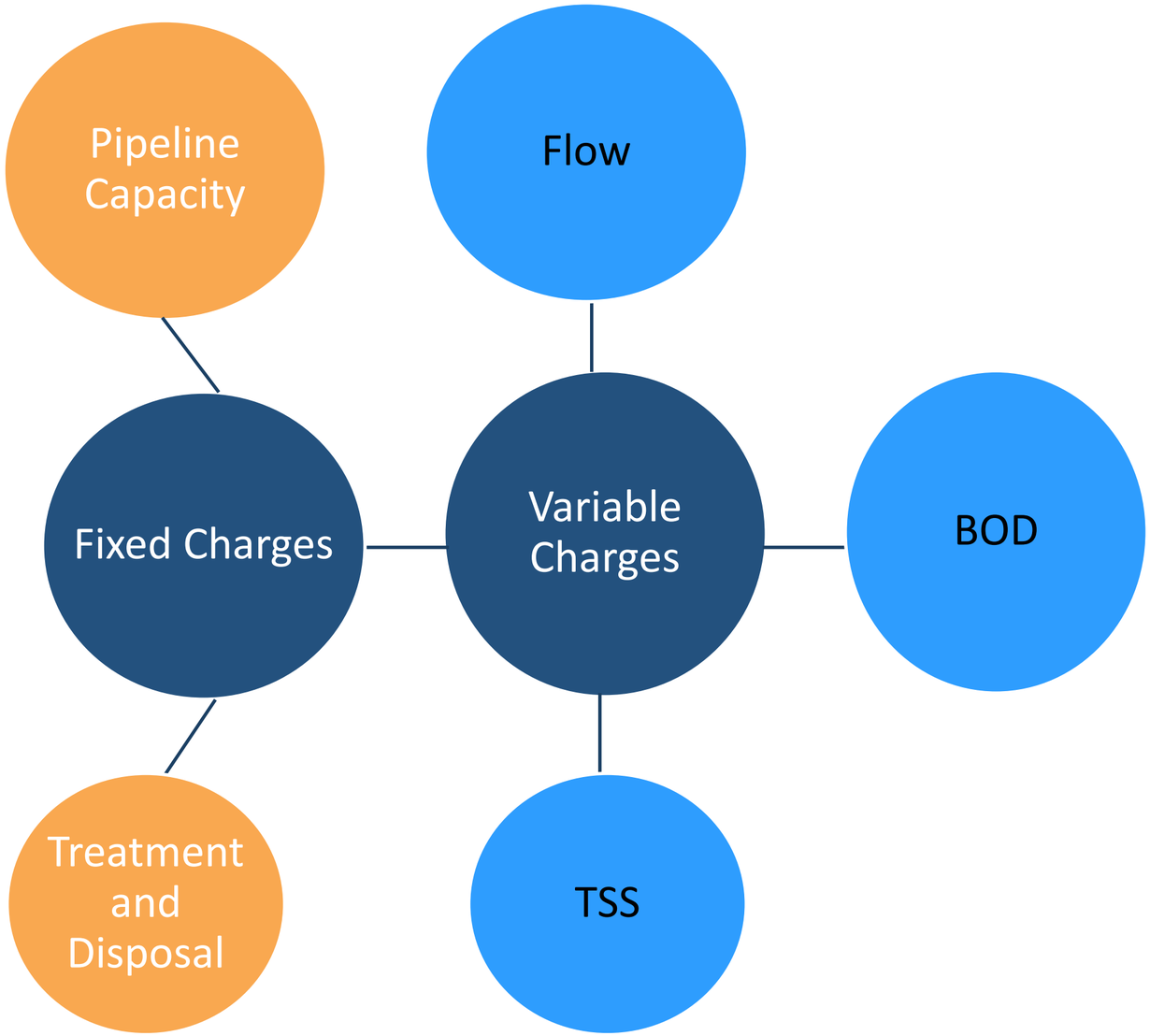
SANTA ANA WATERSHED PROJECT AUTHORITY

# Inland Empire Brine Line Rate Resolution 2024-5

SAWPA Commission Meeting
Agenda Item No. 6.A
David Ruhl
Executive Manager of Engineering and Operations
May 21, 2024

# Recommendation

- That the Commission adopt Resolution No. 2024-5 establishing the Fiscal Year 2024-25 Inland Empire Brine Line Rates to be effective July 1, 2024.




## Brine Line Rate Components:

- Flow
  - Per Million Gallons
- Biochemical Oxygen Demand (BOD)
  - Per 1,000 lbs
- Total Suspended Solids (TSS)
  - Per 1,000 lbs
- Fixed Charges for Pipeline and Treatment and Disposal Capacity Owned
  - Per Million Gallons/Day

# Brine Line Rates Direct Dischargers (FY 2024-25)

| Options | Effective Date | Flow MG | BOD(1) 1,000 lbs | TSS(1) 1,000 lbs | Fixed Pipe | Fixed T&D |
|---|---|---|---|---|---|---|
| Current FY 2023-24 | - | 1,073 | 394 | 494 | 6,654 | 13,505 |
| Proposed FY 2024-25 | 7/1/2024 | 1,097 | 396 | 497 | 6,654 | 13,505 |

(1) BOD and TSS is a “pass through” cost from OC San. BOD and TSS proposed rate for FY 2024-25 match OC San charge received in April 2024.

# Brine Line Rates FY 2019 – FY 2026

| Fiscal Year | Flow (MG) | BOD (1,000 lbs) | TSS (1,000 lbs) | Monthly Fixed Pipeline | Monthly Fixed Treatment |
|---|---|---|---|---|---|
| 2026 Planned | 1,152 | $416 | $522 | $6,654 | $13,505 |
| **2025 Proposed** | **1,097** | **396** | **497** | **6,654** | **13,505** |
| **2024 Current** | 1,073 | 394 | 494 | 6,654 | 13,505 |
| **2023** | 1,049 | 353 | 520 | 6,654 | 13,505 |
| **2022** | 1,018 | 329 | 460 | 6,654 | 13,505 |
| **2021** Jan - June | 1,018 | 329 | 460 | 6,654 | 13,505 |
| **2021** Jul - Dec | 979 | 316 | 442 | 6,398 | 12,985 |
| **2020** | 979 | 316 | 442 | 6,398 | 12,985 |
| **2019** | 946 | 307 | 429 | 6,217 | 12,607 |

# Brine Line Rates % Change (+/-) FY 2019 – FY 2026

| Fiscal Year | Flow MG | BOD (1,000 lbs) | TSS (1,000 lbs) | Monthly Fixed Pipeline | Monthly Fixed Treatment |
|---|---|---|---|---|---|
| 2026 Planned | 5% | 5% | 5.% | 0% | 0% |
| **2025 Proposed** | **2.3%** | **0.5%** | **0.5%** | **0%** | **0%** |
| 2024 Current | 2% | 12% | -5% | 0% | 0% |
| 2023 | 3% | 7% | 13% | 0% | 0% |
| 2022 | 0% | 0% | 0% | 0% | 0% |
| 2021 Jan – Jun | 4% | 4% | 4% | 4% | 4% |
| 2021 Jul – Dec | 0% | 0% | 0% | 0% | 0% |
| 2020 | 4% | 3% | 3% | 3% | 3% |
| 2019 | 5% | 0% | 0% | 5% | 5% |

# Indirect Dischargers

- Currently using a 2-tier System:
  - Brine (<100 mg/L of both BOD or TSS)
  - Non-Brine (≥100 mg/L of either BOD or TSS)
  - Charges based on a per gallon base for brine tier and a per gallon base plus pounds of BOD and pounds of TSS for non-brine tier.

# Indirect Discharger Rates

| Option | Brine[(a)] Tier (< 100 mg/L) / gallon | Non-Brine[(b)] Tier* (≥ 100 mg/L) / gallon | BOD/lb | TSS/lb |
|---|---|---|---|---|
| Current (FY2023-24) | $0.0160 | $0.0160 | $0.7800 | $0.7450 |
| Proposed (FY2024-25) | $0.0164 | $0.0164 | $0.7995 | $0.7636 |

**Non-brine tier charges the flow component plus any pounds of BOD and TSS.*
*(a) Brine Tier if both BOD and TSS concentrations are less than 100 mg/L*
*(b) Non-Brine Tier if any of the BOD or TSS concentrations are 100 mg/L or greater.*

# Capacity Lease Rates

| Lease Option Proposed (FY 2024 – 25) | Flow (per gallon) | Additional BOD (per lb) | Additional TSS (per lb) |
|---|---|---|---|
| Pipeline and Treatment and Disposal | $0.00263 | $0.4080 | $0.2501 |
| Treatment and Disposal Only | $0.00117 | $0.4080 | $0.2501 |

*(a) Discharges not exceeding 250 mg/l of BOD and 250 mg/l of TSS*

# Treatment & Disposal Surcharge Rates

| Option | Flow (per gallon) | BOD (per lb) | TSS (per lb) |
|---|---|---|---|
| Current (FY 2023-24) and Proposed (FY 2024-25) | $0.0021 | $0.4080 | $0.2501 |

These rates apply to dischargers that exceed their contractually owned capacity in any given month.

# Proposed Permit Fees

| Type of Permit | Current Fee (FY 2023-24) And Proposed Fee (FY 2024-25 |
|---|---|
| Direct Discharger | $600 |
| Indirect Discharger | $300 |
| Connection Authorization | $1,100 |
| Liquid Waste Hauler | $250 |

# Recommendation

- That the Commission adopt Resolution No. 2024-5 establishing the Fiscal Year 2024-25 Inland Empire Brine Line Rates to be effective July 1, 2024.

# Questions?

# Thank You

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SANTA ANA WATERSHED PROJECT AUTHORITY

# Adaptation Planning Grant Program
# Santa Ana River Watershed Regional Invasive Species Management

Rachel Gray, Water Resources and Planning Manager

SAWPA Commission Meeting

May 21, 2024

# Recommendation

- That the Commission authorize the General Manager, or designee, to submit a planning grant application to the Governor's Office of Planning and Research for the Integrated Climate Adaptation and Resiliency Program's Adaptation Planning Grant Program to implement the Santa Ana River Watershed Regional Invasive Species Management Project.

# Adaptation Planning Grant Program Round 2
# Governor's Office of Planning and Research

- Grant funds for local and regional planning
- Enhance climate resilience of a region
- Support climate-resilient infrastructure projects

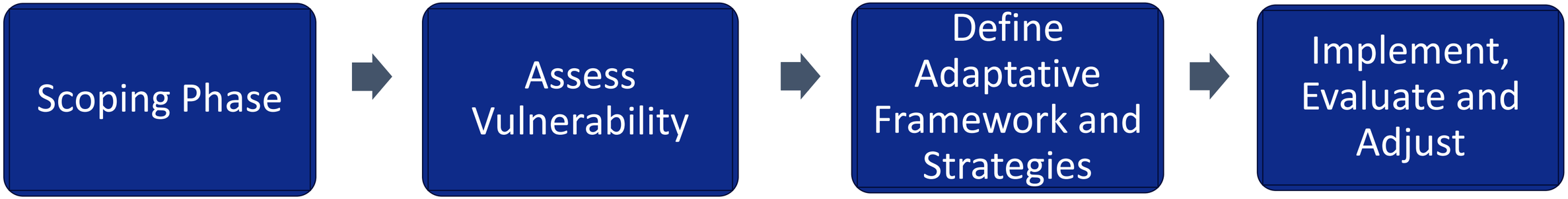
| | |
|---|---|
| Round 2 Available Funding | $9,500,00 |
| Minimum Grant Award | $100,000 |
| Maximum Grant Award | $650,000 |
| Project Completion Timeframe | 24 months |

| Application Component | Total Points Possible |
|---|---|
| Project Vision and Description | 15 |
| Community Need and Adaptive Capacity | 30 |
| Co-Benefits | 10 |
| Partnership | 20 |
| Workplan and Budget | 15 |
| Finalist Interview | 10 |
| **Total** | **100** |

For grant, document community-need and non-profit partner(s).

# Scope Derived from the OPR Grant Guidelines

- Eligible activities must fit into one or more of the four phases included below:



# Project Developed for Grant Application

**Problem Statement:**

- *Arundo donax* (Giant reed) – an invasive species pervasive in the watershed – is problematic for many entities in the watershed in terms of water supply, habitat, and fire.
- Arundo in the watershed consumes up to **12,000-36,000 AFY of water** based on **600-1800 acres of Arundo** in the watershed.*

**Project Purpose:**

Establish a regional coalition to eradicate Arundo from the watershed through multi-agency planning and collaboration.

Specific tasks would address:

- Map Arundo watershed-wide
- Track progress of removal activities
- Develop a strategic plan to guide future efforts
- Investigate connection between Arundo and wildfire
- Support future grant funding opportunities.

**Potential Partners:**

- SAWPA
- SAWPA Member Agencies
- Resource Conservation Districts
- Flood plain managers (county flood control and parks districts)
- Army Corps
- Other federal agencies
- Community-based organizations.

*Based on an acre of Arundo consuming up to 20 AFY of water (California Invasive Plant Council)

# Benefits to Member Agencies and Interested Parties

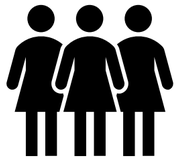
**In general:**

- Arundo is a persistent invasive species in Prado wetlands, along the SAR, tributaries, and in key mitigation locations
- Arundo is problematic for member agencies, resource conservation districts, county flood and parks districts, and Army Corps.

**Benefits:**

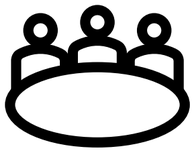
- Increase local water supply resilience
- Restoration of the natural habitat
- Support Habitat Conservation Plan (HCP) permitting requirements (OCWD and SBVMWD)
- Reduce the ignition source for fires
- Support regional collaboration for invasive species removal
- Support grant funding opportunities for removal projects.

# Scope for Grant Application



**Task 1**: Public education on removal of invasive species and their impacts on the ecosystem and climate change risks (drought and wildfires)

**Task 2**: Assess the impacts of invasive species on the health of the ecosystem (water consumption, outcompeting of resources for native species), and study the linkages between invasive species and fire in riverbed/riparian areas.



**Task 3**: Creation of a watershed-wide invasive species **working group** and **strategic plan** to establish shared decision-making processes for adaptation climate planning.  Address: partnerships, leveraging, approach, finance strategies, etc.

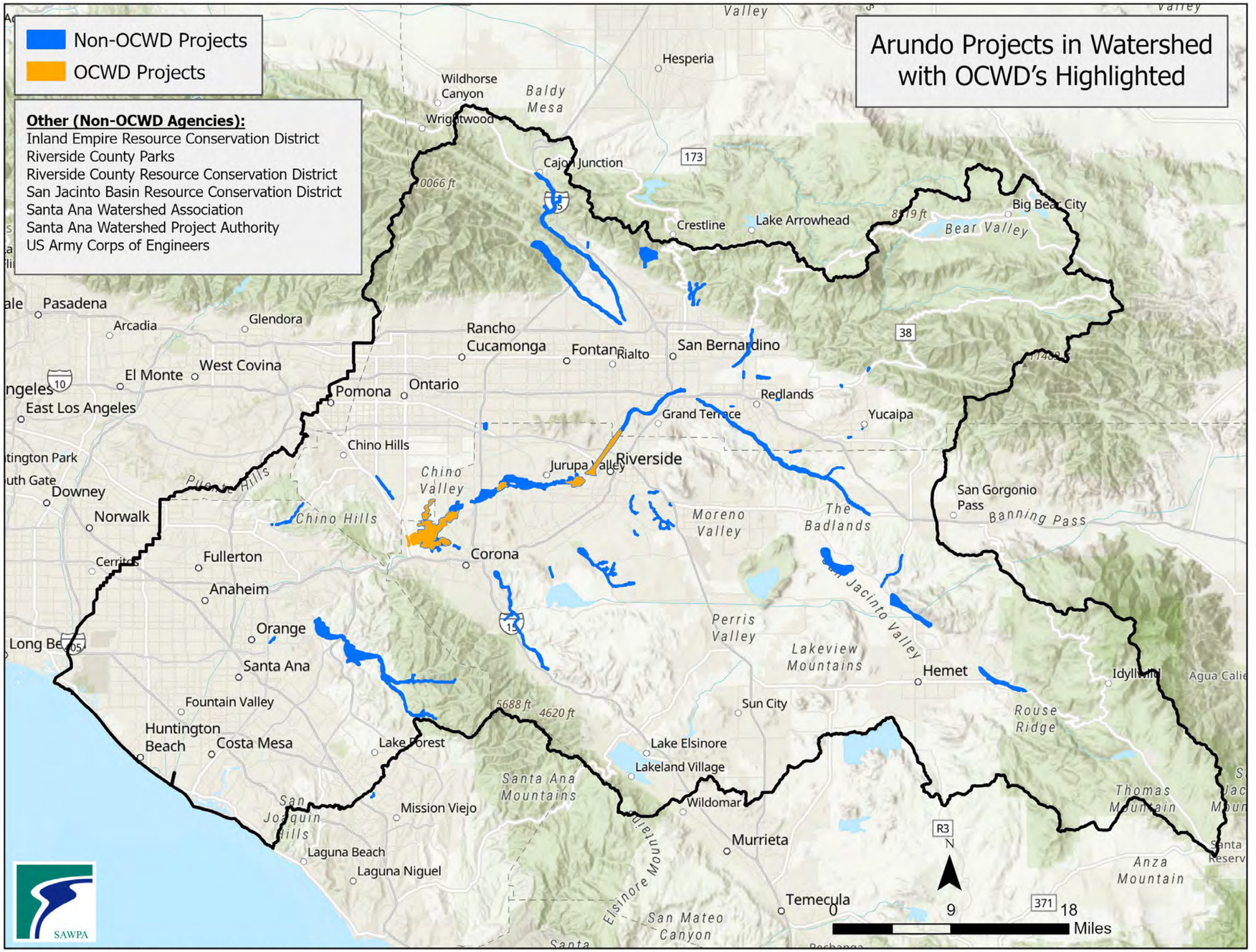
**Task 4**: Analyze **aerial imagery** to detect invasive species to detect Arundo and track removal progress

# Grant Application Draft Budget (No Match Required)

| | |
|---|---|
| Grant Administration (17% of Subtotal) | $94,350 |
| | |
| Task 1 Public Outreach | |
| Development of PR Materials | $25,000 |
| Online Survey Development and Management | $10,000 |
| Survey Boosts Via Social Media | $20,000 |
| Task 2 Study | |
| Technical Memo | $125,000 |
| Task 3 | |
| Workgroup Formation | $125,000 |
| Workgroup Strategic Plan | $125,000 |
| Task 4 | |
| Aerial Imagery Analysis/ Validation | $125,000 |
| | |
| Subtotal | $555,000 |
| **Grand Total (With Grant Admin)** | **$649,350** |

# Areas of Arundo Removal

- Since 1997, an estimated **8,500 acres** of Arundo have been removed in the watershed
- Currently we know of an additional **600 acres** of Arundo, but the actual amount could be **2X-3X that estimate**.

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# SAWPA's Past/Current Involvement in *Arundo Donax* Removal

- Proposition 13 (water bond) project (2002)
- SAWPA gains revenue from SAR Mitigation Bank to fund removal projects via "credits"
  - Funds Inland Empire Resource Conservation District (IERCD) project to remove Arundo in the SAR Watershed headwaters (current)
- SAR Mitigation Bank funding
  - Current funding available: $750K
  - Potential new revenue from bank via credits: $2.1M

# Grant Schedule

- SAWPA Commission Meeting: May 21, 2024
- OWOW Steering Committee Meeting: May 23, 2024
- Application Due: June 3, 2024
- Awards: Summer 2024
- If awarded:
  - Anticipated Start Date: December 1, 2024
  - Anticipated End Date: December 31, 2026

# Recommendation

- That the Commission authorize the General Manager, or designee, to submit a planning grant application to the Governor's Office of Planning and Research for the Integrated Climate Adaptation and Resiliency Program's Adaptation Planning Grant Program to implement the Santa Ana River Watershed Regional Invasive Species Management Project.

# Thank You

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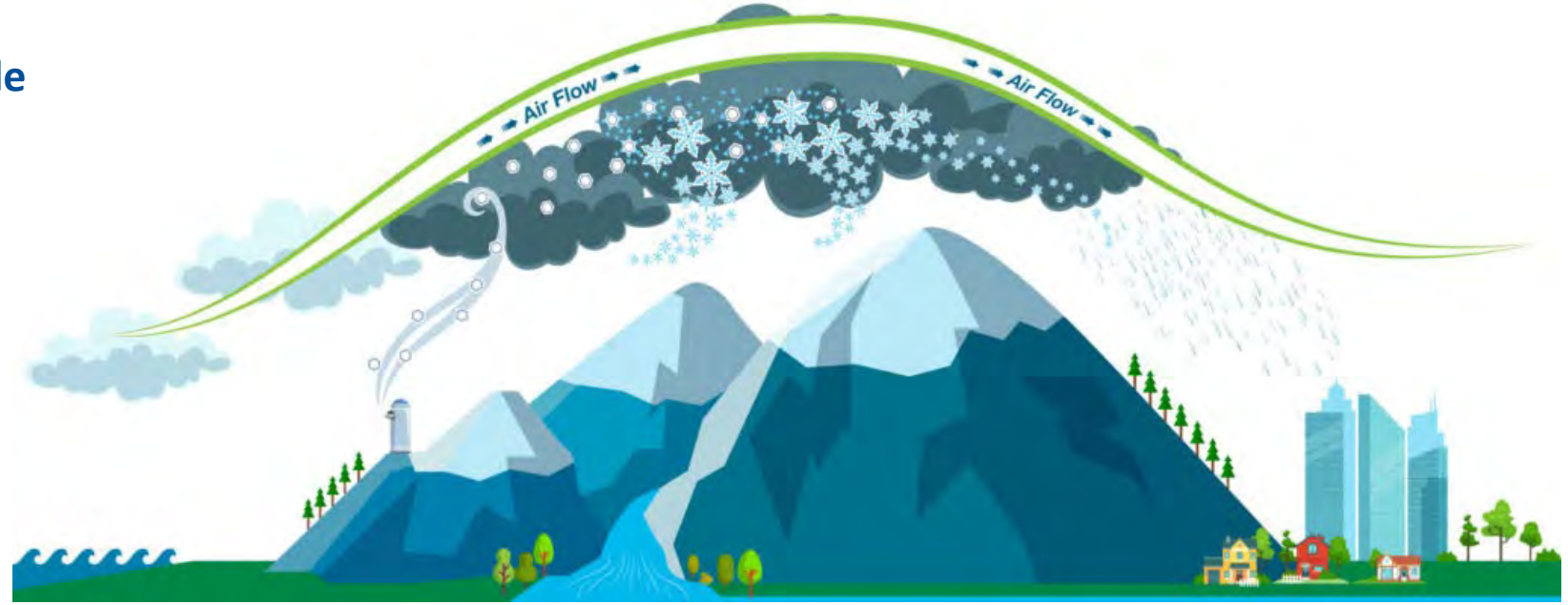
# Santa Ana River Watershed
# Weather Modification Pilot Program Status Update

Agenda Item No. 6.C.

Rachel Gray
Water Resources and Planning Manager
May 21, 2024

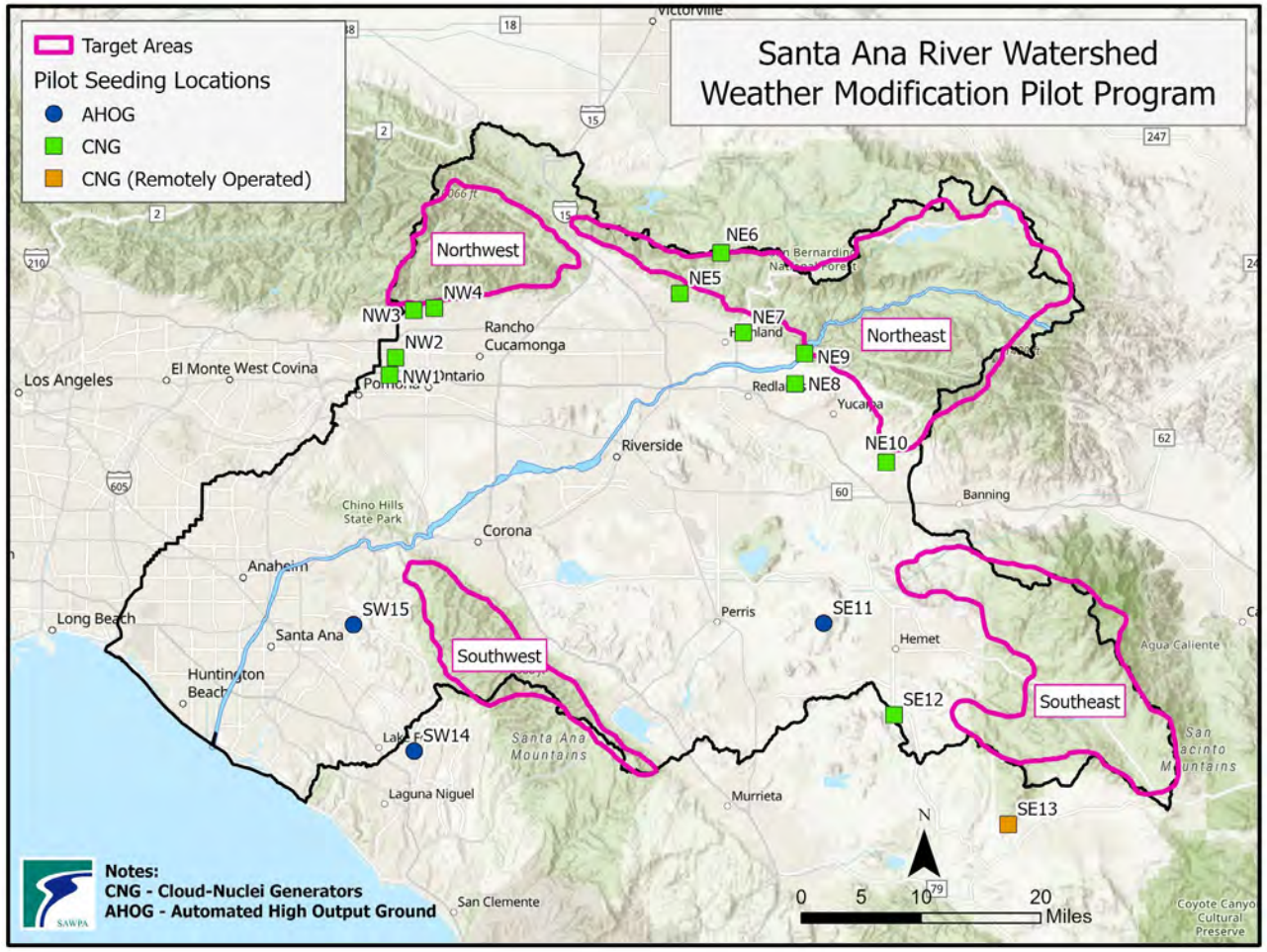
# Presentation Overview

- **Operations**
  - Summary of Cloud Seeding Operations
  - Summary of Precipitation
  - Lessons Learned
- **Communications**
- **Validation**
- **Program Schedule**



# Operations

# Ground-Based Seeding Unit Operations




| Site (15) | Sponsors (11) |
|---|---|
| **Northwest** | |
| **NW1** | Chino Basin Water Conservation District |
| **NW2** | |
| **NW3** | San Antonio Water Company |
| **NW4** | |
| **Northeast** | |
| **NE5** | City of San Bernardino MWD |
| **NE6** | Private Landowner |
| **NE7** | San Bernardino Valley MWD |
| **NE8** | San Bernardino Valley Water Conservation District |
| **NE9** | |
| **NE10** | San Gorgonio Pass Water Agency |
| **Southeast** | |
| **SE11** | Eastern Municipal Water District |
| **SE12** | |
| **SE13** | Private Landowner |
| **Southwest** | |
| **SW14** | El Toro Water District |
| **SW15** | East Orange County Water District |

# Example Sites

**SW14:**
**El Toro Water District**
**(Orange County)**

**NE10:**
**San Gorgonio Pass Water Agency**

**NW2:**
**Chino Basin Water Conservation District**

# Season 1 Timeline

| Task | Completion Date or Time Period |
|---|---|
| Seasonal Program Start | November 15, 2023 |
| Notifications to Fire Departments | December 2023 – January 2024 |
| Seasonal Program Operational Period | November 15, 2023 – April 15, 2024 |
| Seasonal Program End | April 15, 2024 |
| Seasonal Equipment Collection | May 31, 2024 |
| Draft Seasonal Report Delivered | June 30, 2024 |

# Summary of Cloud Seeding Operations

| Units | Storm Periods | Nov 17-18 | Dec 21-22 | Dec 29-30 | Jan 3 | Jan 20-21 | Jan 21-22 | Feb 1 | Feb 20-21 | Mar 6-7 | Mar 23-24 | Mar 30-31 | Apr 5 | Apr 13-14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNGs (Hours of Generator Runtime) | NW1 | | | 23 | 6.5 | | | 10 | 16.75 | 16 | 22 | 30 | 12.75 | 7 |
| | NW2 | | | 23 | 7 | | | 9 | 16.25 | | 20.25 | | 9.25 | 7 |
| | NW3 | 11.25 | 22 | 21 | 5.75 | | | 23.5 | 19.5 | 14 | 22.5 | 26.75 | 8.5 | 24.75 |
| | NW4 | 13.25 | 20.75 | 22 | | | | 23 | 19.75 | 14 | 22.5 | 27.75 | 8.5 | 25 |
| | NE5 | | 26.5 | 21.25 | 8.75 | 17.25 | 24.5 | | | 17 | 22.75 | 31.25 | 12.25 | 25.5 |
| | NE6 | | 21.5 | 9 | 12.25 | 17 | 14.25 | 11.75 | 18.25 | 14 | 18 | 31.25 | 14 | 20.25 |
| | NE7 | | 22.75 | 21 | 9 | 17 | | | 23 | 17.75 | 22.75 | 31.25 | 12.5 | 25.5 |
| | NE8 | | 22.25 | 18.75 | 9.75 | 18.5 | 23.25 | 7.75 | | 15 | 20.5 | | 13 | 25 |
| | NE9 | | 23 | 18.75 | 9.5 | 18.25 | 23.25 | 8 | 20.5 | | 20.25 | 32.25 | 12.75 | 25.5 |
| | NE10 | | 24.25 | 21.25 | 9.25 | 17.75 | 24.75 | 23.5 | 24.25 | 18.75 | 22.5 | 31.25 | 12.25 | 25.25 |
| | SE12 | | 8.75 | 5.5 | 9.75 | | | 14 | | 17 | 4.75 | 33 | 9 | |
| | SE13 | | 19 | 6.5 | 8 | 15.25 | 24.5 | 12.25 | | 12.75 | 18.25 | 32.75 | 12.75 | |
| AHOGS (Flares) | SE11 | | 5 | | 2 | | 4 | 1 | | | | 1 | 1 | |
| | SW14 | | 1 | 3 | | 1 | 3 | | | 1 | | 2 | 2 | |
| | SW15 | | | | | | | | | 2 | | | 1 | 2 |

# Overview of Suspension Criteria

**Flood**
- Warm storm rain on snow
- Freezing level is >8,000 feet
- Quantitative precipitation forecast is > 3 inches in 24 hours

**Burn Scars**
- Threat of debris flow
- Coordinate with flood control districts

**Severe Weather**
- Winter storm warnings
- Flash flood warnings
- Severe thunderstorm warnings
- Sustained winds more than 30 mph at the sites

**Real-Time Decisions**
- Input from FCDs on potential for flooding and mud slides/debris flows.
- Consecutive Storms
- Input from WWTPs

<u>Enacted Suspension Criteria:</u>

February 3-8 storm system:
- Because of the threat of excessive precipitation and subsequent effects of such (flooding, mudslides, etc.), seeding operations were suspended for this storm event.
- SAWPA staff coordinated with FCDs (OC, SB, Riverside).

# Lesson Learned:

## Communication with Local Fire Departments

- Maintain Effective Communication with Local Fire Departments
  - Public notified fire departments due to flame from CNGs: 3 times
  - December 2023 - January 2024
  - Notices sent to all local fire departments
  - For Year 2 Operations:  SAWPA will resend notices to fire departments

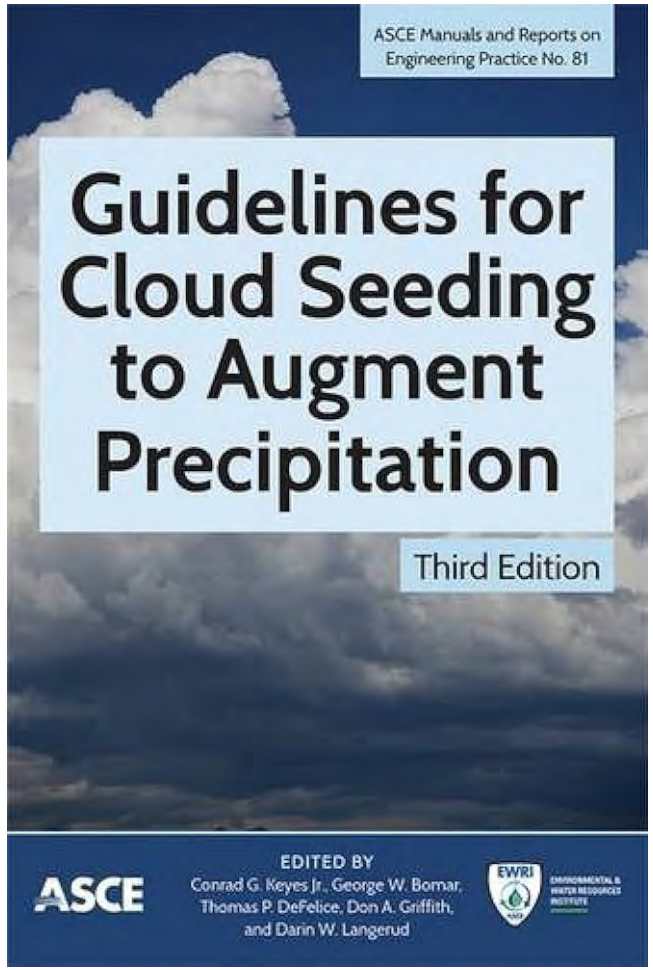
Visible flame while in operation

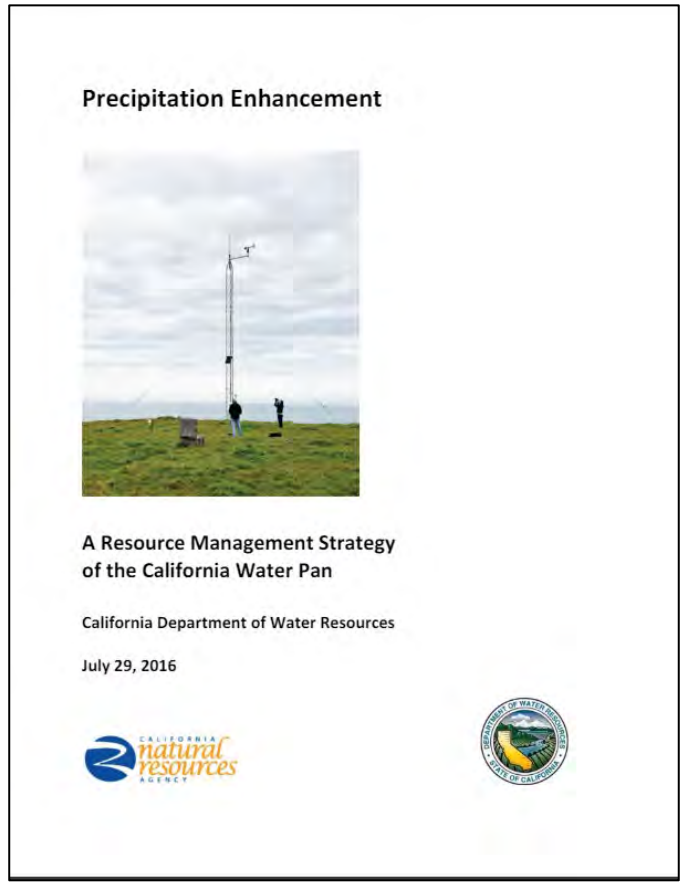

| Site | Agency |
|---|---|
| NE5 | City of San Bernardino Municipal Water Department |
| NE10 | San Gorgonio Pass Water Agency |
| NW1 | Chino Basin Water Conservation District |

# Lesson Learned:

## Transparency on Technical information

- Use of scientific and technical references:
  - SAWPA Feasibility Study (2020)
  - SAWPA CEQA Study (2022)
  - Safety of silver iodide
  - Industry standards and guidelines
  - Cloud seeding experience in CA and the U.S.



# Lesson Learned:
## Seeding Sites Access

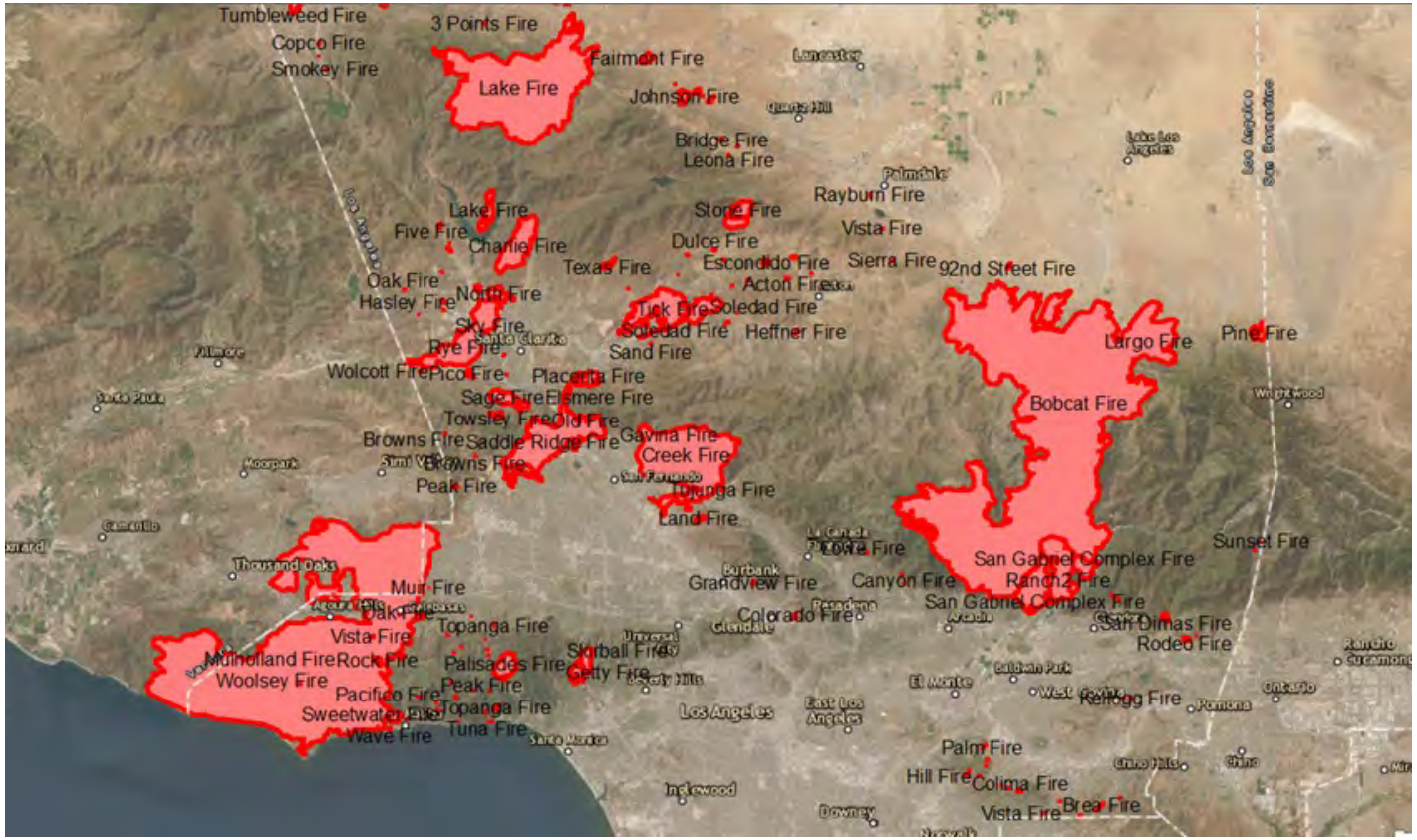
- Maintain effective communication with sponsors to mitigate site access

# Lesson Learned:
## Operators/Operations

- Train backup site operators for continuous unit operations
- Troubleshoot cloud seeding units for optimal equipment operation
    - Leaks in copper tubing.
    - Leaks in propane tanks or CNG units
    - Propane tank levels
    - Seeding solution

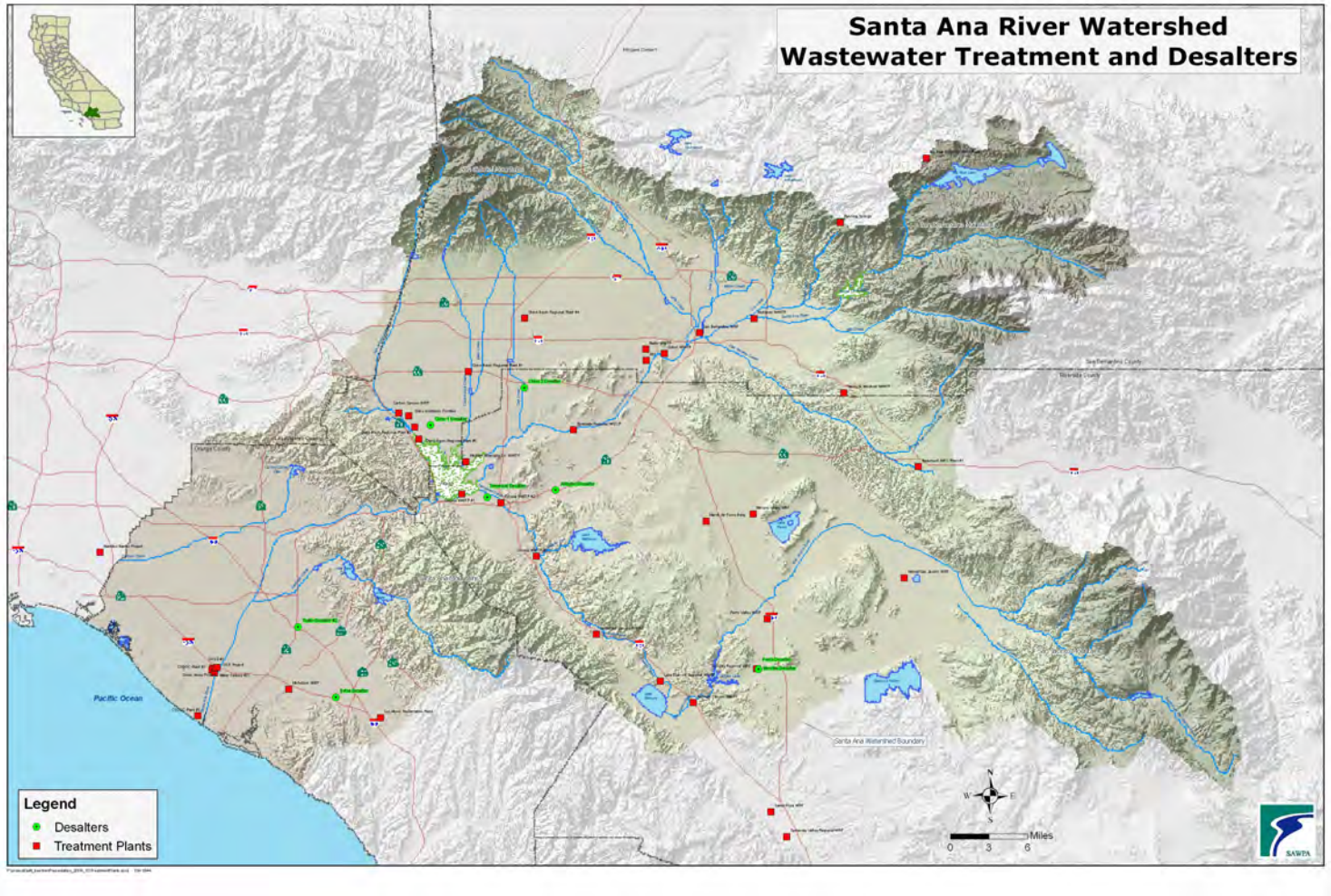
# Lesson Learned:
## Flooding and Debris Flows

- On large storms, coordinate with Flood Control Districts for input on:
  - Burn scars from fires
  - Potential for debris flows
  - Potential for flooding



# Lessons Learned:
## Infrastructure

- Understand the impact of successive storms on infrastructure
  - Stormwater Infrastructure (Flood Control Districts)
  - POTW and Collection Systems Inflow and Infiltration (I&I)



# First Year Summary Report

Report Outline:

1. The Science Behind Cloud Seeding
2. Program Design and Implementation
   - Differences between the feasibility study and actual project design
   - Description and rationale for the location of each cloud seeding unit
3. 2023-2024 Season Operations
   - Seeded Storms: occurrence and justification
   - Unseeded Storms: occurrence and justification
   - Storms project design unable to capture
   - Operational issues encountered
4. Implementation of Suspension Criteria
5. Findings and Recommendations for Future Operational Seeding Years

# Communications

# Summary of Communications

- Communications Plan
- Pilot Program signage at seeding sites
- SAWPA's Pilot Program webpage
  - Cloud seeding event chart
- Communication materials
  - Brochure, fact sheet, FAQ, CEQA documents
  - Door hangers (as needed)
- Public comments and questions
  - Email: weathermodification@sawpa.gov
  - Pilot Program hotline: (951) 289-5440
- Respond to media inquiries
- Speakers bureau

***SAWPA Website: Cloud Seeding Event Chart***

| Month/Year | Start | End | Target Area(s) |
|---|---|---|---|
| December 2023 | 12/21/2023 | 12/22/2023 | NW, NE, SW, and SE |
| | 12/29/2023 | 12/30/2023 | NW, NE, SW, and SE |
| January 2024 | 1/3/2024 | 1/3/2024 | NW, NE, SE |
| | 1/20/2024 | 1/21/2024 | NE, SE, SW |
| | 1/21/2024 | 1/22/2024 | NE, SE, SW |
| February 2024 | 2/1/2024 | 2/1/2024 | NW, NE, SE |
| | 2/20/2024 | 2/21/2024 | NW and NE |
| March 2024 | 3/6/2024 | 3/7/2024 | NW, NE, SW, and SE |
| | 3/23/2024 | 3/24/2024 | NW, NE, SE |
| | 3/30/2024 | 3/31/2024 | NW, NE, SE, and SW |
| April 2024 | 4/5/2024 | 4/5/2024 | NW, NE, SW, and SE |
| | 4/13/2024 | 4/14/2024 | NW, NE, SW |

*Last updated: April 15, 2024

# Common Public Comments and Questions

**Governance and Permitting**
- Required approvals
- Public involvement

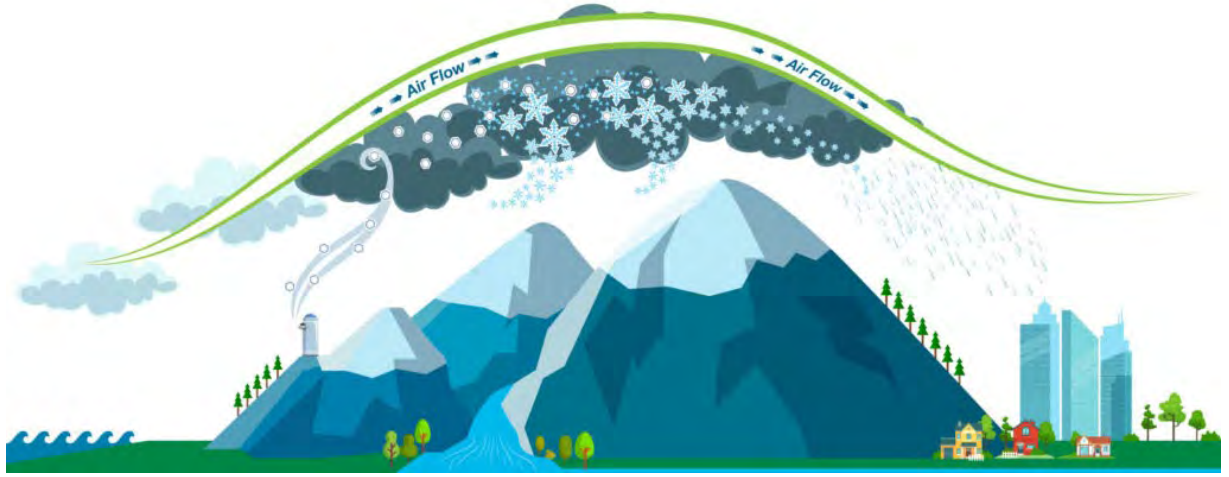
**Operations**
- Potential for flooding
- Potential for thunderstorms
- Potential for fire
- Contributing to contrails (only produced via aerial seeding)

**Safety of Silver Iodide**
- Human health
- Ecological health and impact on the environment

**Potential Impacts**
- People
- Pets
- Soil
- Streams
- Groundwater supplies

**Inquiries received as of April 24, 2024:**
- Emails: 165
  - 40 negative | 24.24%
  - 125 positive | 75.76%

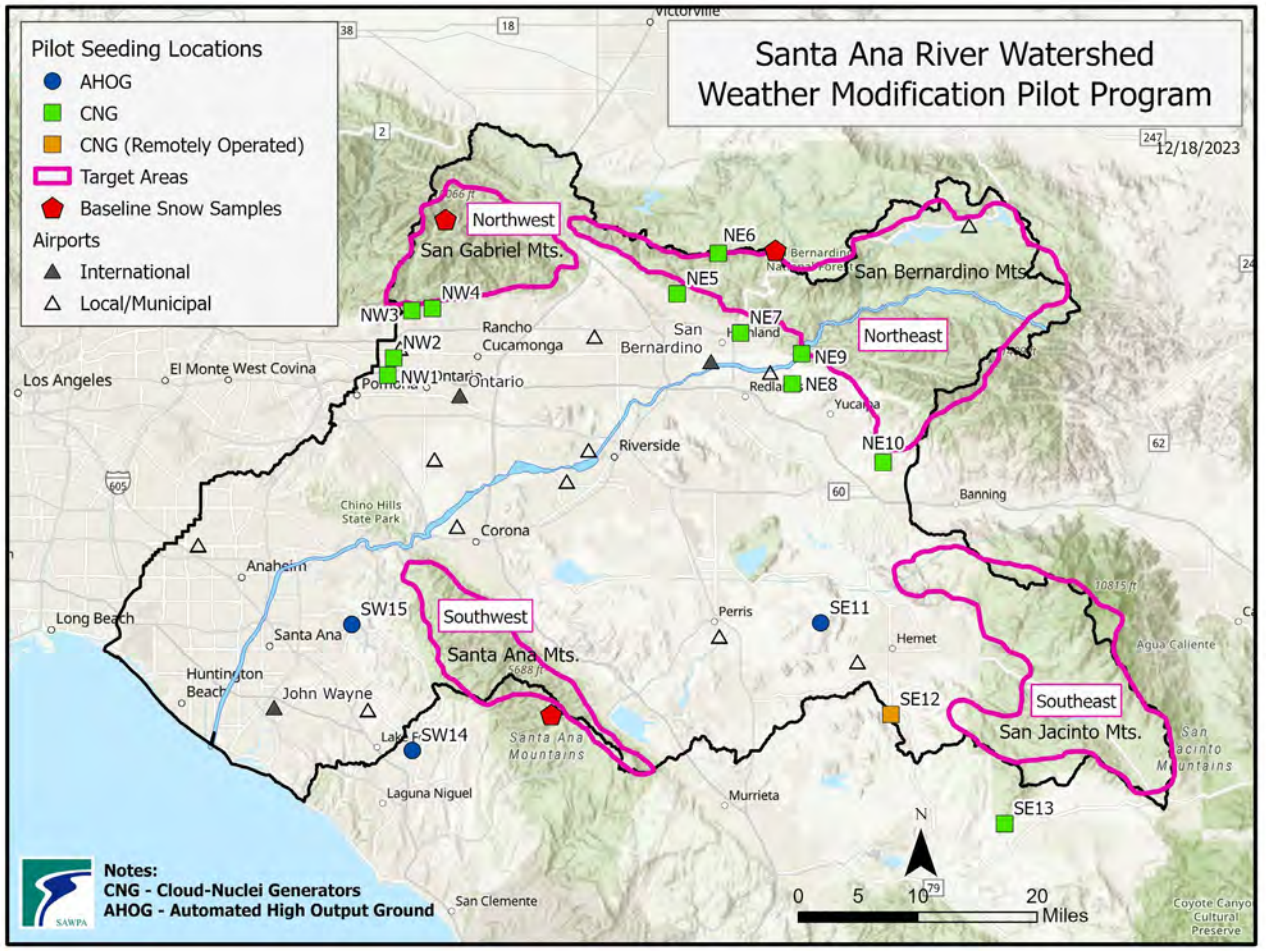
- Hotline calls: 45
  - 6 negative | 13%
  - 39 positive | 86.67%



# Validation

# DRI Tasks

- **Task 1: Evaluate NAWC Operations**
- **Task 2: Snow Chemistry**
- **Task 3: Calculating Seeded Snow-Water Equivalent**
- **Task 4: Target/Control Statistical Analysis**
  - Identify target and control precipitation gauges
  - Establish pre-seeding climatological relationships
- **Task 5: Stream Flow Analysis**
  - Obtain streamflow gauge data
  - Establish pre-seeding climatological relationships



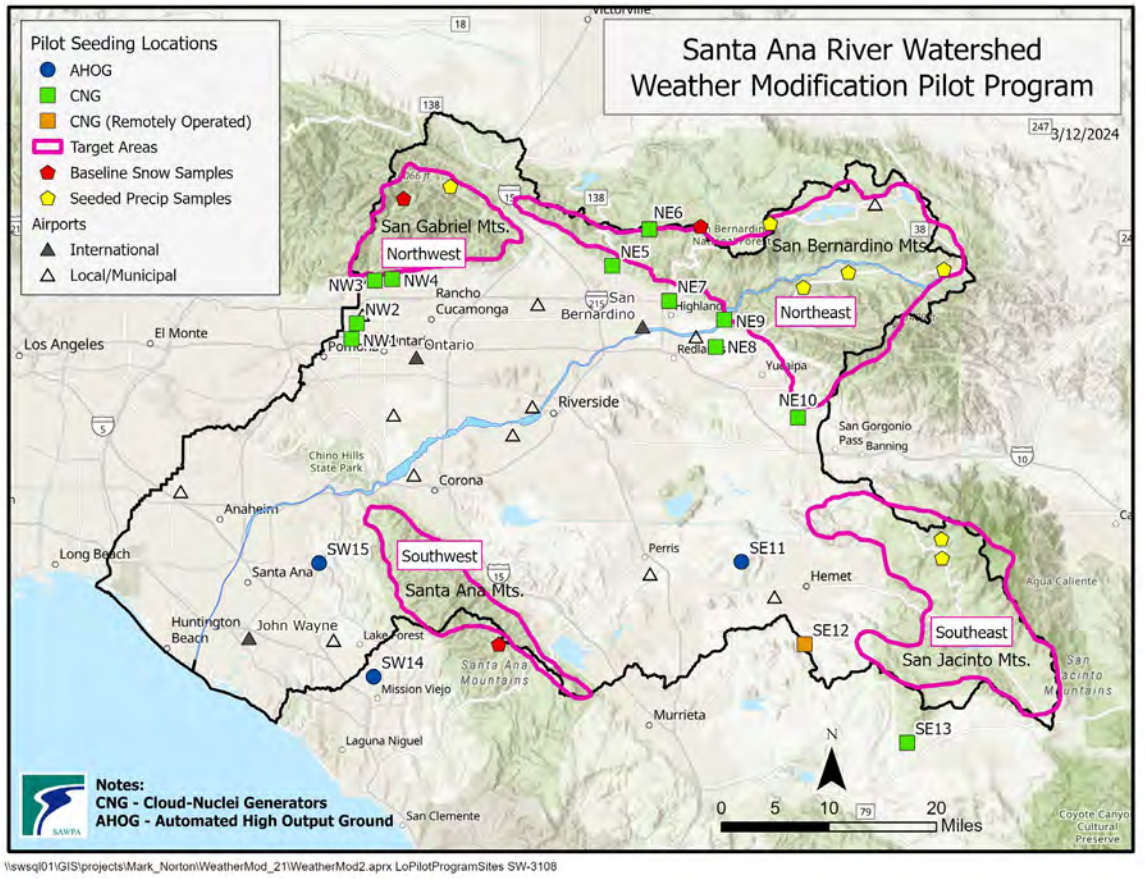
# Validation Task 1: Evaluate NAWC Operations

- Evaluate Operations based on:
  - Seeding/Not Seeding decisions
    - Based on weather conditions
  - Seeding event times
  - Generators used

| Storm hours/Seeding Hours | Seedable storm period (hr) | Unseedable Storm period (hr) |
|---|---|---|
| Cloud seeding generators running (hr) | Yes Yes | No Yes |
| Cloud seeding generators not running (hr) | Yes No | No No |

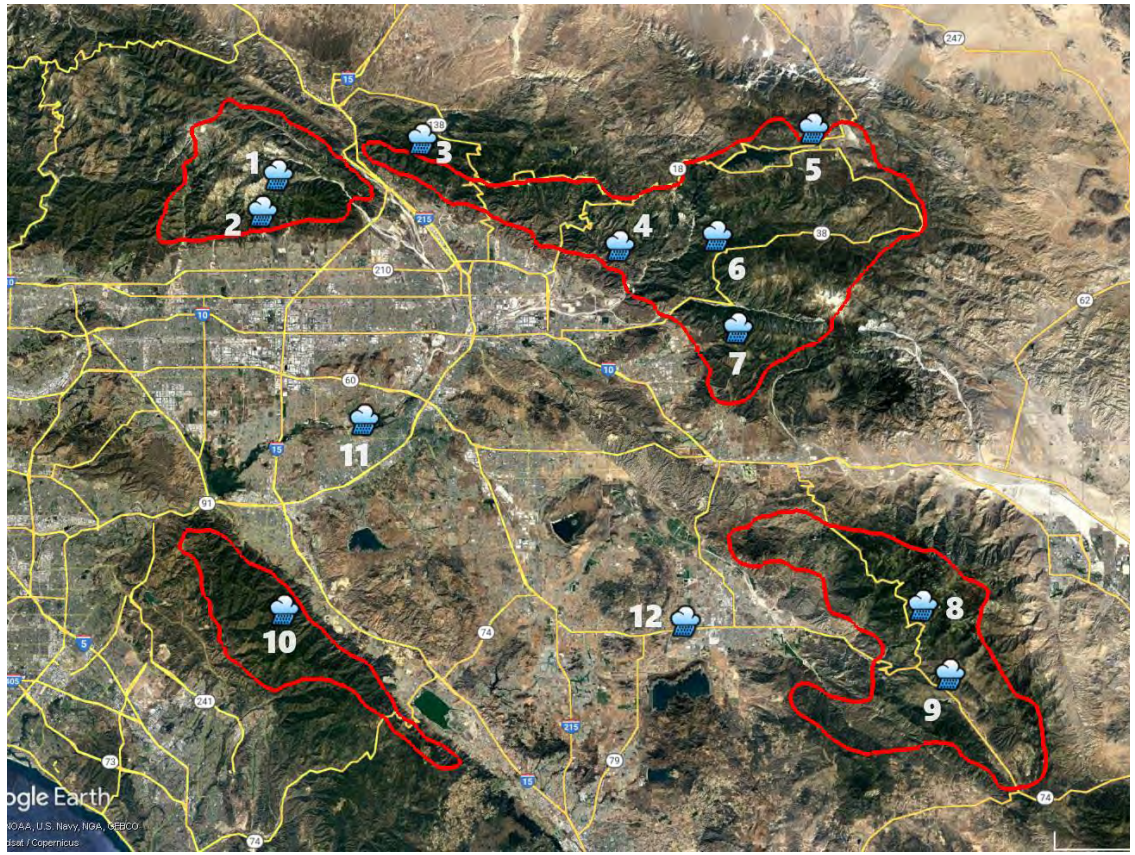
# Validation Task 2:  Snow Chemistry

- Collected Baseline Snow Samples
  - March 2023
- Snow and precipitation samples were collected for 2 winter storms in the NW, NE, and SE target areas
  - February-March 2024
- Submitted  samples to the DRI trace chemistry lab for analysis
- Lab results expected June 2024



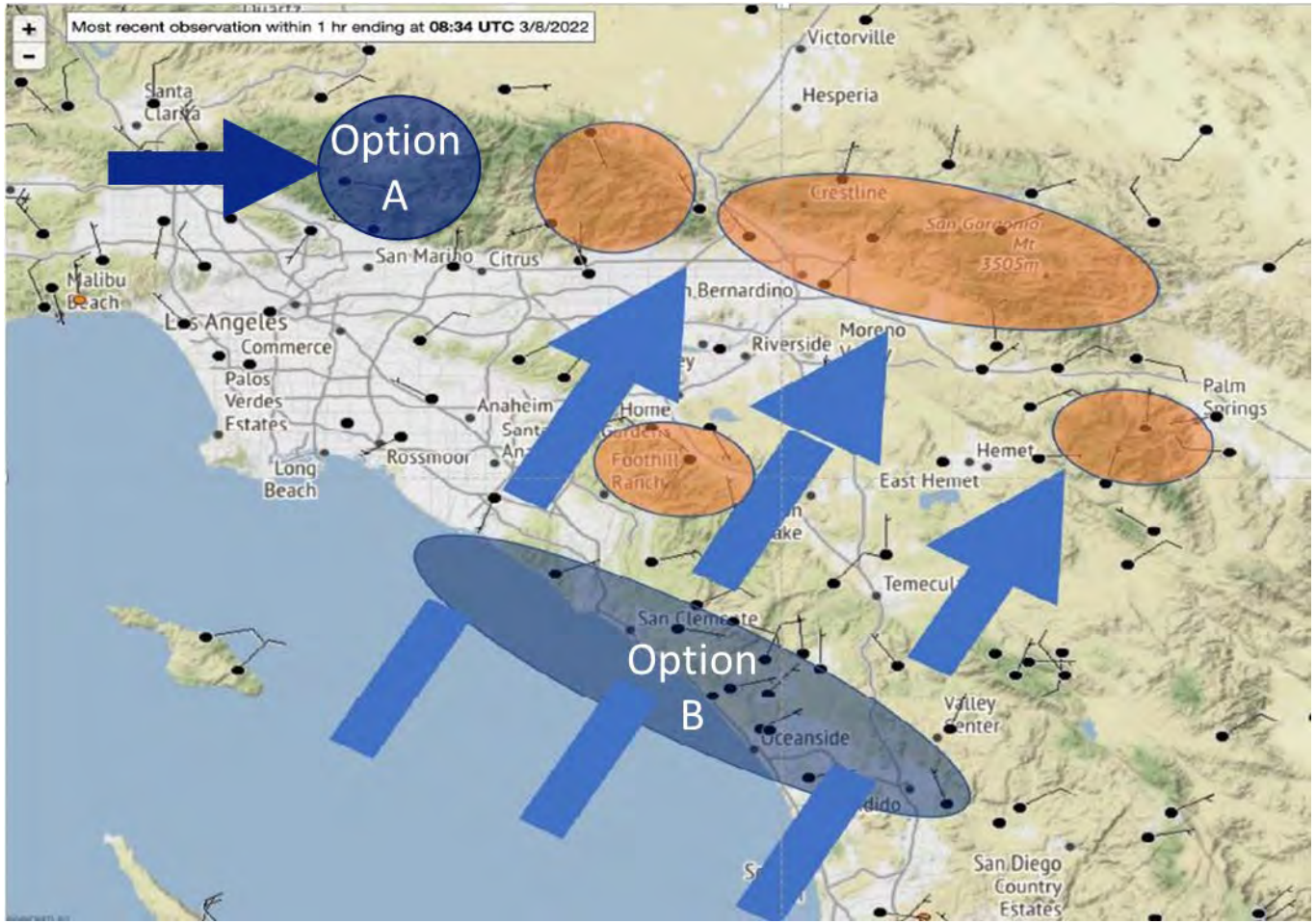
# Validation Task 3: Snow-Water Equivalent

- Calculating the “Seeding Snow-Water Equivalent” or SWE
  - Analysis of rainfall from precipitation gauges
  - Analysis of snow observations from ski resorts
  - Determine effective seeding periods and estimate precipitation contributions from cloud seeding
- Assess precipitation as rainfall and snowfall



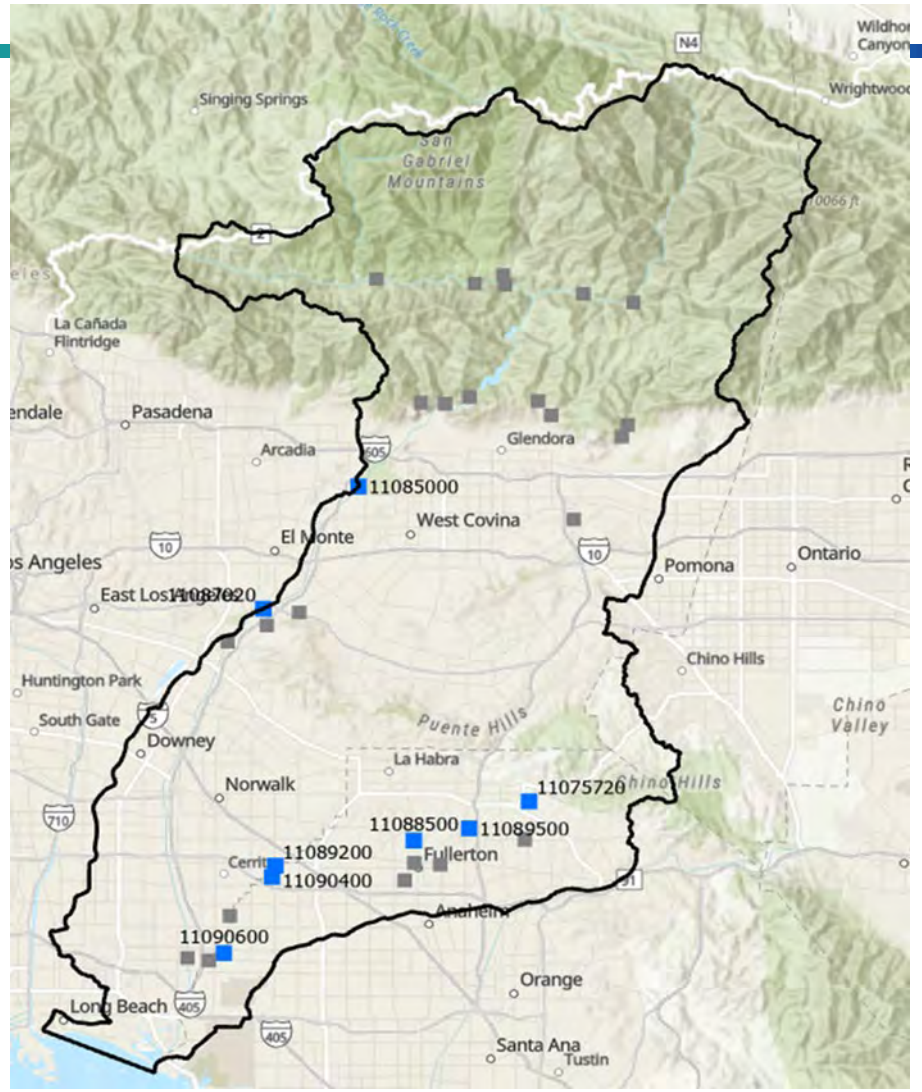
# Validation Task 4: Target/Control Analysis

- Two options for control areas:
  - Option A – San Gabriel Mountains
  - Option B – Coastal City
- Identify **precipitation gauges** for Target areas and Control areas (i.e., Options A and B)
- Calculate **statistical relationship** between control area and target area gauges
- For the seeded storms, precipitation in target gauges will be compared to the historical relationship
- **Excess precipitation** will be contributed to cloud seeding



# Validation Task 5: Stream Flow Analysis

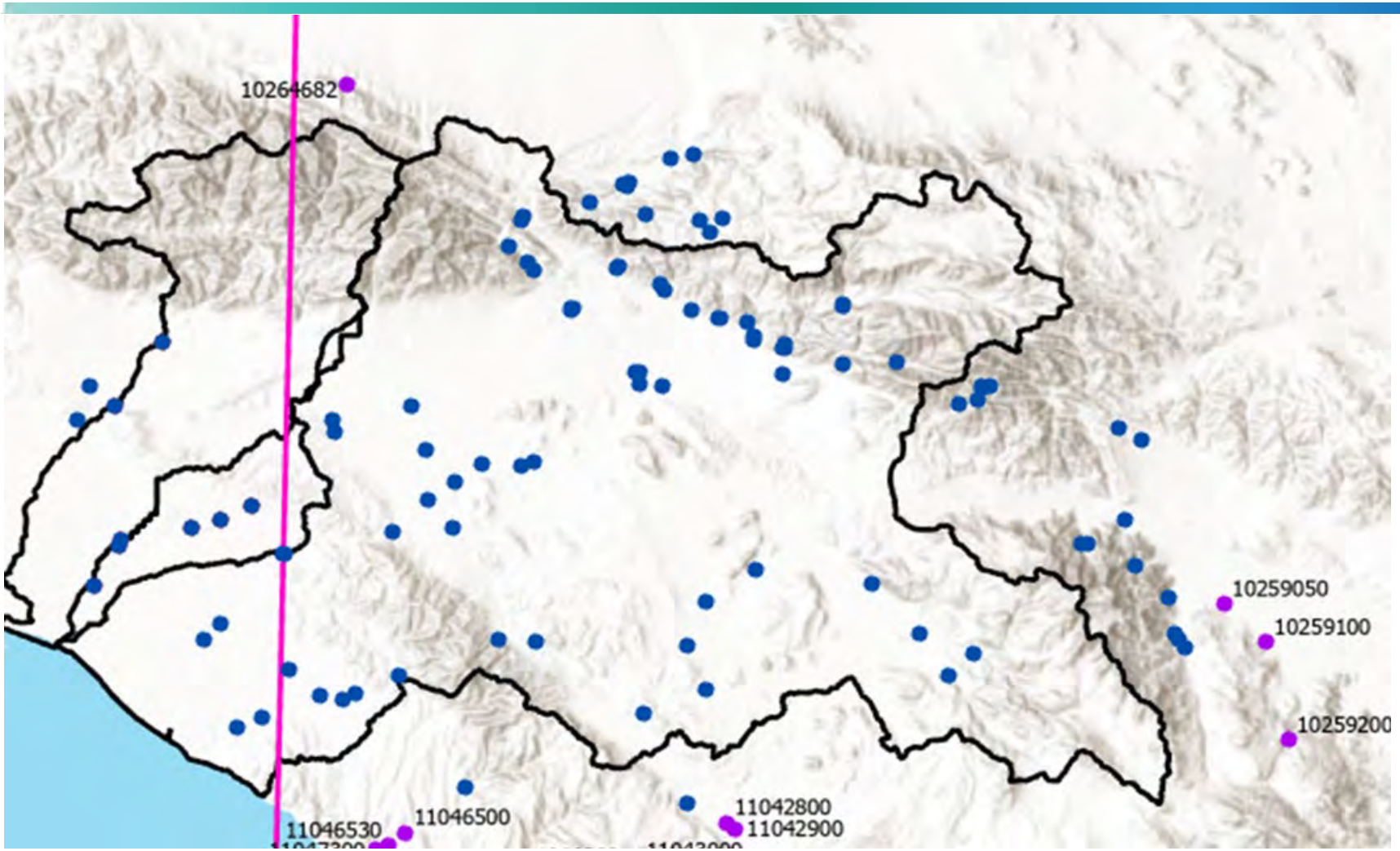
- Obtained **streamflow gauges** from the San Gabriel (Control Area) and Santa Ana River Watersheds (Target Areas)
- Calculate **statistical relationship** between the selected target areas and control area streamflow gauges
- The target area runoff data will be compared to historic relationship
- **Excess runoff** will be attributed to the cloud seeding program




Stream gauges in Control Area

(only representative gauges will be selected for analysis)

# Validation Task 5: Stream Flow Analysis




Stream gauges in Target Areas

(only representative gauges will be selected for analysis)

# Pilot Program Schedule

# Pilot Program Schedule

| | |
|---|---|
| • First Year Summary Report | June 2024 |
| • Project Validation Tasks | July 2024 |
| • Year 2 Equipment Mobilization | Oct 2024 |
| • Year 2 Operations – Start | Nov 15, 2024 |

# Questions