# Board Contract Summary

**BC** ___-_____

For use with Expenditure Contracts submitted to the Board for approval. Complete information below, print, obtain signature of authorized departmental representative, and submit this form, along with attachments, to the appropriate departments for signature. See also: *Auditor-Controller Intranet Policies->Contracts.*

| | | |
|---|---|---|
| D1. | Fiscal Year | FY 21-22 |
| D2. | Department Name | PW/Water Agency |
| D3. | Contact Person | Matt Scrudato |
| D4. | Telephone | Ext. 38781 |

| | | |
|---|---|---|
| K1. | Contract Type *(check one)*: ☑ Personal Service ☐ Capital | |
| K2. | Brief Summary of Contract Description/Purpose | Cloudseeding Program |
| K3. | Department Project Number | WA8209 |
| K4. | Original Contract Amount | $ 204,600 |
| K5. | Contract Begin Date | 11/15/21 |
| K6. | Original Contract End Date | 6/30/22 |
| K7. | Amendment? (Yes or No) | No |
| K8. | - New Contract End Date | N/A |
| K9. | - Total Number of Amendments | N/A |
| K10. | - This Amendment Amount | $ N/A |
| K11. | - Total Previous Amendment Amounts | $ N/A |
| K12. | - Revised Total Contract Amount | $ N/A |

| | | |
|---|---|---|
| B1. | Intended Board Agenda Date | November 9, 2021 |
| B2. | Number of Workers Displaced *(if any)* | NA |
| B3. | Number of Competitive Bids *(if any)* | |
| B4. | Lowest Bid Amount *(if bid)* | |
| B5. | If Board waived bids, show Agenda Date | |
| | and Agenda Item Number | |
| B6. | Boilerplate Contract Text Changed? *(If Yes, cite Paragraph)* | |

| | | |
|---|---|---|
| F1. | Fund Number | 3050 |
| F2. | Department Number | 054 |
| F3. | Line Item Account Number | 7460 |
| F4. | Project Number *(if applicable)* | WA8209 |
| F5. | Program Number *(if applicable)* | 3009 |
| F6. | Org Unit Number *(if applicable)* | |
| F7. | Payment Terms | net 30 |

| | | |
|---|---|---|
| V1. | Auditor-Controller Vendor Number | 240538 |
| V2. | Payee/Contractor Name | North American Weather Consultants, II |
| V3. | Mailing Address | 8180 S. Highland Drive, Suite B-2 |
| V4. | City State (two-letter) Zip (include +4 if known) | Sandy, UT 84093 |
| V5. | Telephone Number | (801) 942-9005 |
| V6. | Vendor Contact Person | Don Griffith |
| V7. | Workers Comp Insurance Expiration Date | 11/16/21 |
| V8. | Liability Insurance Expiration Date | 8/31/22 |
| V9. | Professional License Number | |
| V10 | Verified by (print name of county staff) | |

V11 Company Type *(Check one):* ☐ Individual ☐ Sole Proprietorship ☐ Partnership ☑ Corporation

**I certify** information is complete and accurate; designated funds available; required concurrences evidenced on signature page.

Date: 10/20/2021 | 8:08 AM PDT Authorized Signature: DocuSigned by: Kimberly Ruiz 4ED3DC554501498...

Revised 1/13/2014

# AGREEMENT FOR SERVICES OF INDEPENDENT CONTRACTOR

**THIS AGREEMENT** (hereafter Agreement) is made by and between the **Santa Barbara County Water Agency**, a political subdivision of the State of California (hereafter COUNTY) and **North American Weather Consultants, Inc.** with an address at 8180 South Highland Drive, Suite B-2, Sandy, Utah, 84093 (hereafter CONTRACTOR) wherein CONTRACTOR agrees to provide and COUNTY agrees to accept the services specified herein.

**WHEREAS**, CONTRACTOR represents that it is specially trained, skilled, experienced, and competent to perform the special services required by COUNTY and COUNTY desires to retain the services of CONTRACTOR pursuant to the terms, covenants, and conditions herein set forth;

**NOW, THEREFORE,** in consideration of the mutual covenants and conditions contained herein, the parties agree as follows:

## 1. DESIGNATED REPRESENTATIVE

Matt Scrudato at phone number (805) 803-8781 is the representative of COUNTY and will administer this Agreement for and on behalf of COUNTY. Garrett Cammans at phone number (801) 942-9005 is the authorized representative for CONTRACTOR. Changes in designated representatives shall be made only after advance written notice to the other party.

## 2. NOTICES

Any notice or consent required or permitted to be given under this Agreement shall be given to the respective parties in writing, by personal delivery or facsimile, or with postage prepaid by first class mail, registered or certified mail, or express courier service, as follows:

To COUNTY: Mr. Matt Young Santa Barbara County Water Agency, 130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101

To CONTRACTOR: Mr. Garrett Cammans, NAWC, 8180 South Highland Drive, STE B-2, Sandy, Utah 84093

or at such other address or to such other person that the parties may from time to time designate in accordance with this Notices section. If sent by first class mail, notices and consents under this section shall be deemed to be received five (5) days following their deposit in the U.S. mail. This Notices section shall not be construed as meaning that either party agrees to service of process except as required by applicable law.

## 3. SCOPE OF SERVICES

CONTRACTOR agrees to provide services to COUNTY in accordance with EXHIBIT A attached hereto and incorporated herein by reference.

## 4. TERM

CONTRACTOR shall commence performance on **November 15, 2021** and end performance upon completion, but no later than **June 30, 2022** unless otherwise directed by COUNTY or unless earlier terminated.

## 5. COMPENSATION OF CONTRACTOR

In full consideration for CONTRACTOR's services, CONTRACTOR shall be paid for performance under this Agreement in accordance with the terms of EXHIBIT B attached hereto and incorporated herein by reference. Billing shall be made by invoice, which shall include the contract number assigned by COUNTY and which is delivered to the

address given in Section 2 NOTICES above following completion of the increments identified on EXHIBIT B. Unless otherwise specified on EXHIBIT B, payment shall be net thirty (30) days from presentation of invoice.

6. **INDEPENDENT CONTRACTOR**

It is mutually understood and agreed that CONTRACTOR (including any and all of its officers, agents, and employees), shall perform all of its services under this Agreement as an independent contractor as to COUNTY and not as an officer, agent, servant, employee, joint venturer, partner, or associate of COUNTY. Furthermore, COUNTY shall have no right to control, supervise, or direct the manner or method by which CONTRACTOR shall perform its work and function. However, COUNTY shall retain the right to administer this Agreement so as to verify that CONTRACTOR is performing its obligations in accordance with the terms and conditions hereof. CONTRACTOR understands and acknowledges that it shall not be entitled to any of the benefits of a COUNTY employee, including but not limited to vacation, sick leave, administrative leave, health insurance, disability insurance, retirement, unemployment insurance, workers' compensation and protection of tenure. CONTRACTOR shall be solely liable and responsible for providing to, or on behalf of, its employees all legally-required employee benefits. In addition, CONTRACTOR shall be solely responsible and save COUNTY harmless from all matters relating to payment of CONTRACTOR's employees, including compliance with Social Security withholding and all other regulations governing such matters. It is acknowledged that during the term of this Agreement, CONTRACTOR may be providing services to others unrelated to the COUNTY or to this Agreement.

7. **STANDARD OF PERFORMANCE**

CONTRACTOR represents that it has the skills, expertise, and licenses/permits necessary to perform the services required under this Agreement. Accordingly, CONTRACTOR shall perform all such services in the manner and according to the standards observed by a competent practitioner of the same profession in which CONTRACTOR is engaged. All products of whatsoever nature, which CONTRACTOR delivers to COUNTY pursuant to this Agreement, shall be prepared in a first class and workmanlike manner and shall conform to the standards of quality normally observed by a person practicing in CONTRACTOR's profession. CONTRACTOR shall correct or revise any errors or omissions, at COUNTY'S request without additional compensation. Permits and/or licenses shall be obtained and maintained by CONTRACTOR without additional compensation.

8. **DEBARMENT AND SUSPENSION**

CONTRACTOR certifies to COUNTY that it and its employees and principals are not debarred, suspended, or otherwise excluded from or ineligible for, participation in federal, state, or county government contracts. CONTRACTOR certifies that it shall not contract with a subcontractor that is so debarred or suspended.

9. **TAXES**

CONTRACTOR shall pay all taxes, levies, duties, and assessments of every nature due in connection with any work under this Agreement and shall make any and all payroll deductions required by law. COUNTY shall not be responsible for paying any taxes on CONTRACTOR's behalf, and should COUNTY be required to do so by state, federal, or local taxing agencies, CONTRACTOR agrees to promptly reimburse COUNTY for the full value of such paid taxes plus interest and penalty, if any. These taxes shall include, but not be limited to, the following: FICA (Social Security), unemployment insurance contributions, income tax, disability insurance, and workers' compensation insurance.

10. **CONFLICT OF INTEREST**

CONTRACTOR covenants that CONTRACTOR presently has no employment or interest and shall not acquire any employment or interest, direct or indirect, including any interest in any business, property, or source of income, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement. CONTRACTOR further covenants that in the performance of this Agreement, no person having any such

interest shall be employed by CONTRACTOR. COUNTY retains the right to waive a conflict of interest disclosed by CONTRACTOR if COUNTY determines it to be immaterial, and such waiver is only effective if provided by COUNTY to CONTRACTOR in writing.

11. **OWNERSHIP OF DOCUMENTS AND INTELLECTUAL PROPERTY**

COUNTY shall be the owner of the following items incidental to this Agreement upon production, whether or not completed: all data collected, all documents of any type whatsoever, all photos, designs, sound or audiovisual recordings, software code, inventions, technologies, and other materials, and any material necessary for the practical use of such items, from the time of collection and/or production whether or not performance under this Agreement is completed or terminated prior to completion. CONTRACTOR shall not release any of such items to other parties except after prior written approval of COUNTY.

Unless otherwise specified in Exhibit A, CONTRACTOR hereby assigns to COUNTY all copyright, patent, and other intellectual property and proprietary rights to all data, documents, reports, photos, designs, sound or audiovisual recordings, software code, inventions, technologies, and other materials prepared or provided by CONTRACTOR pursuant to this Agreement (collectively referred to as "Copyrightable Works and Inventions"). COUNTY shall have the unrestricted authority to copy, adapt, perform, display, publish, disclose, distribute, create derivative works from, and otherwise use in whole or in part, any Copyrightable Works and Inventions. CONTRACTOR agrees to take such actions and execute and deliver such documents as may be needed to validate, protect and confirm the rights and assignments provided hereunder. CONTRACTOR warrants that any Copyrightable Works and Inventions and other items provided under this Agreement will not infringe upon any intellectual property or proprietary rights of any third party. CONTRACTOR at its own expense shall defend, indemnify, and hold harmless COUNTY against any claim that any Copyrightable Works or Inventions or other items provided by CONTRACTOR hereunder infringe upon intellectual or other proprietary rights of a third party, and CONTRACTOR shall pay any damages, costs, settlement amounts, and fees (including attorneys' fees) that may be incurred by COUNTY in connection with any such claims. This Ownership of Documents and Intellectual Property provision shall survive expiration or termination of this Agreement.

**12. NO PUBLICITY OR ENDORSEMENT**

CONTRACTOR shall not use COUNTY's name or logo or any variation of such name or logo in any publicity, advertising or promotional materials. CONTRACTOR shall not use COUNTY's name or logo in any manner that would give the appearance that the COUNTY is endorsing CONTRACTOR. CONTRACTOR shall not in any way contract on behalf of or in the name of COUNTY. CONTRACTOR shall not release any informational pamphlets, notices, press releases, research reports, or similar public notices concerning the COUNTY or its projects, without obtaining the prior written approval of COUNTY.

13. **COUNTY PROPERTY AND INFORMATION**

All of COUNTY's property, documents, and information provided for CONTRACTOR's use in connection with the services shall remain COUNTY's property, and CONTRACTOR shall return any such items whenever requested by COUNTY and whenever required according to the Termination section of this Agreement. CONTRACTOR may use such items only in connection with providing the services. CONTRACTOR shall not disseminate any COUNTY property, documents, or information without COUNTY's prior written consent.

14. **RECORDS, AUDIT, AND REVIEW**

CONTRACTOR shall keep such business records pursuant to this Agreement as would be kept by a reasonably prudent practitioner of CONTRACTOR's profession and shall maintain such records for at least four (4) years following the termination of this Agreement. All accounting records shall be kept in accordance with generally accepted accounting principles. COUNTY shall have the right to audit and review all such documents and records at any time during CONTRACTOR's regular business hours or upon reasonable notice. In addition, if this Agreement

exceeds ten thousand dollars ($10,000.00), CONTRACTOR shall be subject to the examination and audit of the California State Auditor, at the request of the COUNTY or as part of any audit of the COUNTY, for a period of three (3) years after final payment under the Agreement (Cal. Govt. Code Section 8546.7). CONTRACTOR shall participate in any audits and reviews, whether by COUNTY or the State, at no charge to COUNTY.

If federal, state or COUNTY audit exceptions are made relating to this Agreement, CONTRACTOR shall reimburse all costs incurred by federal, state, and/or COUNTY governments associated with defending against the audit exceptions or performing any audits or follow-up audits, including but not limited to: audit fees, court costs, attorneys' fees based upon a reasonable hourly amount for attorneys in the community, travel costs, penalty assessments and all other costs of whatever nature. Immediately upon notification from COUNTY, CONTRACTOR shall reimburse the amount of the audit exceptions and any other related costs directly to COUNTY as specified by COUNTY in the notification.

15. **INDEMNIFICATION AND INSURANCE**

CONTRACTOR agrees to the indemnification and insurance provisions as set forth in EXHIBIT C attached hereto and incorporated herein by reference.

16. **NONDISCRIMINATION**

COUNTY hereby notifies CONTRACTOR that COUNTY's Unlawful Discrimination Ordinance (Article XIII of Chapter 2 of the Santa Barbara County Code) applies to this Agreement and is incorporated herein by this reference with the same force and effect as if the ordinance were specifically set out herein and CONTRACTOR agrees to comply with said ordinance.

17. **NONEXCLUSIVE AGREEMENT**

CONTRACTOR understands that this is not an exclusive Agreement and that COUNTY shall have the right to negotiate with and enter into contracts with others providing the same or similar services as those provided by CONTRACTOR as the COUNTY desires.

18. **NON-ASSIGNMENT**

CONTRACTOR shall not assign, transfer or subcontract this Agreement or any of its rights or obligations under this Agreement without the prior written consent of COUNTY and any attempt to so assign, subcontract or transfer without such consent shall be void and without legal effect and shall constitute grounds for termination.

19. **TERMINATION**

A. By COUNTY. COUNTY may, by written notice to CONTRACTOR, terminate this Agreement in whole or in part at any time, whether for COUNTY's convenience, for nonappropriation of funds, or because of the failure of CONTRACTOR to fulfill the obligations herein.

1. **For Convenience**. COUNTY may terminate this Agreement in whole or in part upon thirty (30) days written notice. During the thirty (30) day period, CONTRACTOR shall, as directed by COUNTY, wind down and cease its services as quickly and efficiently as reasonably possible, without performing unnecessary services or activities and by minimizing negative effects on COUNTY from such winding down and cessation of services.

2. **For Nonappropriation of Funds**. Notwithstanding any other provision of this Agreement, in the event that no funds or insufficient funds are appropriated or budgeted by federal, state or COUNTY governments, or funds are not otherwise available for payments in the fiscal year(s) covered by the term of this Agreement, then COUNTY will notify CONTRACTOR of such occurrence and COUNTY

may terminate or suspend this Agreement in whole or in part, with or without a prior notice period. Subsequent to termination of this Agreement under this provision, COUNTY shall have no obligation to make payments with regard to the remainder of the term.

3. **For Cause**. Should CONTRACTOR default in the performance of this Agreement or materially breach any of its provisions, COUNTY may, at COUNTY's sole option, terminate or suspend this Agreement in whole or in part by written notice. Upon receipt of notice, CONTRACTOR shall immediately discontinue all services affected (unless the notice directs otherwise) and notify COUNTY as to the status of its performance. The date of termination shall be the date the notice is received by CONTRACTOR, unless the notice directs otherwise.

B. By CONTRACTOR. Should COUNTY fail to pay CONTRACTOR all or any part of the payment set forth in EXHIBIT B, CONTRACTOR may, at CONTRACTOR's option terminate this Agreement if such failure is not remedied by COUNTY within thirty (30) days of written notice to COUNTY of such late payment.

C. Upon termination, CONTRACTOR shall deliver to COUNTY all data, estimates, graphs, summaries, reports, and all other property, records, documents or papers as may have been accumulated or produced by CONTRACTOR in performing this Agreement, whether completed or in process, except such items as COUNTY may, by written permission, permit CONTRACTOR to retain. Notwithstanding any other payment provision of this Agreement, COUNTY shall pay CONTRACTOR for satisfactory services performed to the date of termination to include a prorated amount of compensation due hereunder less payments, if any, previously made. In no event shall CONTRACTOR be paid an amount in excess of the full price under this Agreement nor for profit on unperformed portions of service. CONTRACTOR shall furnish to COUNTY such financial information as in the judgment of COUNTY is necessary to determine the reasonable value of the services rendered by CONTRACTOR. In the event of a dispute as to the reasonable value of the services rendered by CONTRACTOR, the decision of COUNTY shall be final. The foregoing is cumulative and shall not affect any right or remedy which COUNTY may have in law or equity.

20. **SECTION HEADINGS**

The headings of the several sections, and any Table of Contents appended hereto, shall be solely for convenience of reference and shall not affect the meaning, construction or effect hereof.

21. **SEVERABILITY**

If any one or more of the provisions contained herein shall for any reason be held to be invalid, illegal or unenforceable in any respect, then such provision or provisions shall be deemed severable from the remaining provisions hereof, and such invalidity, illegality or unenforceability shall not affect any other provision hereof, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

22. **REMEDIES NOT EXCLUSIVE**

No remedy herein conferred upon or reserved to COUNTY is intended to be exclusive of any other remedy or remedies, and each and every such remedy, to the extent permitted by law, shall be cumulative and in addition to any other remedy given hereunder or now or hereafter existing at law or in equity or otherwise.

23. **TIME IS OF THE ESSENCE**

Time is of the essence in this Agreement and each covenant and term is a condition herein.

24. **NO WAIVER OF DEFAULT**

No delay or omission of COUNTY to exercise any right or power arising upon the occurrence of any event of default shall impair any such right or power or shall be construed to be a waiver of any such default or an acquiescence therein; and every power and remedy given by this Agreement to COUNTY shall be exercised from time to time and as often as may be deemed expedient in the sole discretion of COUNTY.

25. **ENTIRE AGREEMENT AND AMENDMENT**

In conjunction with the matters considered herein, this Agreement contains the entire understanding and agreement of the parties and there have been no promises, representations, agreements, warranties or undertakings by any of the parties, either oral or written, of any character or nature hereafter binding except as set forth herein. This Agreement may be altered, amended or modified only by an instrument in writing, executed by the parties to this Agreement and by no other means. Each party waives their future right to claim, contest or assert that this Agreement was modified, canceled, superseded, or changed by any oral agreements, course of conduct, waiver or estoppel.

26. **SUCCESSORS AND ASSIGNS**

All representations, covenants and warranties set forth in this Agreement, by or on behalf of, or for the benefit of any or all of the parties hereto, shall be binding upon and inure to the benefit of such party, its successors and assigns.

27. **COMPLIANCE WITH LAW**

CONTRACTOR shall, at its sole cost and expense, comply with all County, State and Federal ordinances and statutes now in force or which may hereafter be in force with regard to this Agreement. The judgment of any court of competent jurisdiction, or the admission of CONTRACTOR in any action or proceeding against CONTRACTOR, whether COUNTY is a party thereto or not, that CONTRACTOR has violated any such ordinance or statute, shall be conclusive of that fact as between CONTRACTOR and COUNTY.

28. **CALIFORNIA LAW AND JURISDICTION**

This Agreement shall be governed by the laws of the State of California. Any litigation regarding this Agreement or its contents shall be filed in the County of Santa Barbara, if in state court, or in the federal district court nearest to Santa Barbara County, if in federal court.

29. **EXECUTION OF COUNTERPARTS**

This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original; and all such counterparts, or as many of them as the parties shall preserve undestroyed, shall together constitute one and the same instrument.

30. **AUTHORITY**

All signatories and parties to this Agreement warrant and represent that they have the power and authority to enter into this Agreement in the names, titles and capacities herein stated and on behalf of any entities, persons, or firms represented or purported to be represented by such entity(ies), person(s), or firm(s) and that all formal requirements necessary or required by any state and/or federal law in order to enter into this Agreement have been fully complied with. Furthermore, by entering into this Agreement, CONTRACTOR hereby warrants that it shall not have breached the terms or conditions of any other contract or agreement to which CONTRACTOR is obligated, which breach would have a material effect hereon.

31. **SURVIVAL**

All provisions of this Agreement which by their nature are intended to survive the termination or expiration of this Agreement shall survive such termination or expiration.

32. **PRECEDENCE**

In the event of conflict between the provisions contained in the numbered sections of this Agreement and the provisions contained in the Exhibits, the provisions of the Exhibits shall prevail over those in the numbered sections.

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Agreement for Services of Independent Contractor between the **Santa Barbara County Water Agency** and **North American Weather Consultants, Inc**.

**IN WITNESS WHEREOF,** the parties have executed this Agreement to be effective on the date executed by COUNTY.

**ATTEST:**

Mona Miyasato
County Executive Officer
Ex Officio Clerk of the Board of Directors of the Santa Barbara County Water Agency

By: _____
Deputy Clerk

**SANTA BARBARA COUNTY WATER AGENCY:**

By: _____
Bob Nelson, Chair, Board of Directors

Date: _____

**RECOMMENDED FOR APPROVAL:**

Santa Barbara County Water Agency

By: DocuSigned by: Scott McGolpin 1D6104A97F1C4E8...
Scott D. McGolpin, Public Works Director

**CONTRACTOR:**

North American Weather Consultants, Inc.

By: DocuSigned by: Garrett Cammans DA9ED37D273D4B8...
Authorized Representative

Name: Garrett Cammans

Title: President

**APPROVED AS TO FORM:**

Rachel Van Mullem
County Counsel

By: DocuSigned by: Johannah Hartley BD0FDC916C3B468...
Deputy County Counsel

**APPROVED AS TO ACCOUNTING FORM:**

Auditor-Controller
Betsy M. Schaffer, CPA

By: DocuSigned by: B9D7C9FF7A414AE...
Deputy

**APPROVED AS TO FORM:**

Ray Aromatorio, ARM, AIC
Risk Management

By: DocuSigned by: Ray Aromatorio D3DB8526E16F47F...
Risk Management

# EXHIBIT A

# STATEMENT OF WORK

## 1.0 INTRODUCTION

### 1.1 HISTORY

North American Weather Consultants (NAWC), the world's longest-standing private weather modification company, is pleased to submit a scope of work for a Santa Barbara County cloud seeding program for the 2021-2022 winter season.

NAWC has a long history of involvement in weather modification research in Santa Barbara County dating back to the 1950s. Early operational programs were conducted in the early 1950s and again in 1978. NAWC was involved in a research weather modification program from 1967-1973 known as Santa Barbara II (Thompson, et al., 1975). This research program served as the foundation for the design and conduct of later operational seeding programs conducted within the county by NAWC, beginning in 1981.

The Santa Barbara County Water Agency (SBCWA) completed a number of tasks during 1981 designed to reactivate cloud seeding activities within the County. These tasks included: 1) preparation of a Negative Declaration Statement (#81-ND-87), 2) conducting a public hearing (December 10, 1981), and 3) obtaining a Weather Resource Management permit from the California Department of Water Resources. North American Weather Consultants (NAWC) was awarded an initial contract from the SBCWA (dated January 11, 1982) to conduct an operational cloud seeding program during the remainder of the 1982 winter season. Two target areas were identified to be seeded: 1) the Upper Santa Ynez watershed above Cachuma Reservoir and 2) the Huasna-Alamo watershed above Twitchell Reservoir. Periodic contracts were awarded to NAWC by the SBCWA to continue these operational programs in a nearly continuous fashion through the 1997 Water Year. Atmospherics, Inc. was awarded a contract to conduct an operational program during the 1998 Water Year. Weather Modification, Inc., of Fargo, North Dakota, was awarded a contract by the SBCWA to conduct operational programs for the 1999 through 2001 Water Years. NAWC, under contract with the SBCWA, resumed its conduct of operations for the County during the 2001-2002 winter season. This program utilized a revised project design based upon the highly successful results of the earlier research conducted by NAWC (e.g., Santa Barbara II phase I and phase II experiments). The SBCWA has renewed NAWC's contract to conduct the cloud seeding operations through the present season. NAWC has, thus, conducted this program for the SBCWA in 38 previous winter seasons at this point. NAWC and SBCWA personnel co-authored a technical paper that summarized the cloud seeding activities in Santa Barbara County dating back to the 1950s (Griffith, et al, 2005).

NAWC performed a historical target/control evaluation of the seeded winter seasons. This study was published in the Weather Modification Association's Journal of Weather Modification (Griffith, et al, 2015). The following is the abstract from this paper:

*A search for potential long-term target and control precipitation measurement sites was conducted which identified three acceptable control sites and four acceptable target sites (two in each of the intended target areas). Linear and multiple-linear regression equations were developed for each of the target areas using periods without any cloud seeding in either the control or target areas. Relatively high correlations were obtained between the control and target sites with $r^2$ values ranging from 0.84 to 0.91.*

*When these regression equations were used to predict the amount of precipitation for the December-March period for the two target areas during seeded seasons, and then compared to the actual amounts of precipitation, the average results for all the seeded seasons were:*

- *Upper Santa Ynez Target Area: Estimated increases of 19% to 21% from the linear and multiple-linear equations (24 seeded seasons).*
- *Huasna-Alamo Target Area: Estimated increases of 9% from both the linear and multiple-linear equations (27 seeded seasons).*

Realizing the importance and benefit of this additional rainfall, the water purveyors of Santa Barbara County under the administrative leadership of the SBCWA have sponsored a cloud seeding program in nearly all water years since 1982.

### 1.2 GLOSSARY OF ACRONYMS

| | |
|---|---|
| AHOGS | Automated High-Output Ground Seeding |
| AGI | Silver Iodide |
| ASCE | American Society of Civil Engineers |
| GFS | Global Forecast Systems (model) |
| HRRR | High Resolution Rapid Refresh (model) |
| HYSPLIT | Hybrid Single-Particle Lagrangian Integrated Trajectory (model) |
| IR | Infrared (satellite image reference) |
| NAM | North American Model |
| NAWC | North American Weather Consultants |
| NCAR | National Center for Atmospheric Research |
| NOAA | National Oceanic and Atmospheric Administration |
| NWS | National Weather Service |
| QPF | Quantitative Precipitation Forecast |
| SBCWA | Santa Barbara County Water Agency |
| SFB | Space Force Base (Vandenberg) |
| WMA | Weather Modification Association |
| WRF | Weather Research and Forecasting (model) |
| WV | Water vapor (satellite image reference) |

## 2.0 PROGRAM DESIGN

NAWC's conduct of operational precipitation enhancement programs is based on the design of previously conducted successful research programs that are transferable to the intended target area(s). There are many new types of readily accessible meteorological information that have enhanced the decision-making for the operation of these programs, and technological improvements in equipment have also contributed. The focus has remained on providing maximum value to the client based on proven techniques.

Rationale for the project design is provided in the following sub-sections.

### 2.1 DESIGN CONSIDERATIONS

NAWC follows the American Society of Civil Engineer's Guidelines (ASCE 2016) and Standards (ASCE 2017). NAWC will also ensure that our operations are compatible with the SBCWA's Mitigated Negative Declaration (MND) prepared for this program in 2013. The types of precipitation augmentation programs that find the most scientific acceptance are the winter orographic (mountainous) programs. The Santa Barbara program would be considered an orographic one based upon the coastal mountain settings of the target areas.

Several professional societies have adopted capability or position statements regarding weather modification programs. The principal societies or associations that have existing weather modification statements include:

- The Weather Modification Association (WMA)
- The American Meteorological Society (AMS)
- The American Society of Civil Engineers (ASCE)
- From the preceding organizational statements, the following key points regarding the current status of winter orographic seeding include:
- Of the primary categories of cloud seeding for precipitation increase, seeding of winter orographic storm systems seems to offer the best prospects for increasing precipitation in an economically viable manner.
- Strong statistical evidence exists for winter seasonal increases of the order of 5% to 15% and potentially greater in some coastal regions.
- A growing body of evidence from focused physical studies is confirming some key steps in the weather modification process, in support of the statistical evidence.
- High resolution mobile radar has positively identified the effects of silver iodide on cloud systems based on real time data and imagery.

### 2.2 PROGRAM DESIGN

Based on the long history of research and operational programs in this area, both airborne and ground-based seeding modes have been found effective when properly employed. In recent seasons (as well as the current one), only the ground-based seeding mode is being utilized. The primary seeding opportunity is associated with convective bands that are embedded in winter storms as they pass over Santa Barbara County.

These convective bands are common features of Pacific Coast storms impacting California during winter storms (Elliott and Hovind 1964). The bands contain updrafts that lift low-level, moisture laden air from near the surface to higher elevations. This results in clouds containing supercooled (below freezing but still liquid) droplets as the rising air passes above the freezing level. Our understanding of these bands is that the low-level vertical updrafts that are fueling the bands dynamics are frequently focused along the leading edges of these bands. These inflow/updraft portions of the bands are the areas where supercooled cloud droplets are present in the greatest concentrations, and are the focus of seeding operations.

The operational four-month ground based seeding period will be December 1, 2021 through March 31, 2022 targeting the Huasna-Alamo and the Santa Ynez watersheds. Six ground-based, remotely operated silver iodide flare sites will be used (see section 2.4).

### 2.3 PERSONNEL

There are three necessary staff positions: 1) a program supervisor, 2) a program meteorologist and 3) a local part-time technician who is available to maintain and service the ground based seeding equipment. The following identifies our proposed personnel.

Mr. Garrett Cammans, President of North American Weather Consultants, will serve as the program supervisor. Mr. David Yorty will be NAWC's lead project meteorologist and will also serve as an alternate program supervisor. Mr. Yorty has approximately 20 years of experience in conducting operational cloud seeding programs. He is a certified program manager with the WMA. David also has significant experience in weather forecasting specifically in support of weather modification programs, as well is in conducting target/control evaluations to examine the long-term effectiveness of these programs. NAWC can provide back-up project meteorologists to this program if needed.

The project meteorologist will perform the various project duties needed to conduct a safe and effective operation. A partial list of these duties is provided in Table 1.

**Table 1**
**Partial List of Duties to be Performed by Project Meteorologist**

| |
|---|
| Monitor weather conditions and determine, based on meteorological data and radar observation, the approach of seedable storm systems. |
| Estimate the probable results and impacts of seeding using predictive computer models, real time rain and river flow data ("Alert System" provided by Flood Control), and other information. Such estimates shall be updated regularly as conditions change. |
| Coordinate with Flood Control and SBCWA personnel to determine potential flows in key water courses and determine the appropriate action regarding seeding activities. |
| Direct the actual seeding operations using appropriate storm selection and target area criteria and continuously monitor ground seeding operations using radar and remote interrogation systems. |
| Keep an accurate record of the time that each seeding flare is ignited at the seeding sites. |
| Inform Flood Control and SBCWA Personnel, through prescribed communication channels and in a timely manner, of all significant events relative to the program, including beginning and ending seed times. |
| Provide necessary radar and precipitation data to Flood Control and SBCWA staff as requested during periods of heavy rainfall or flooding. |
| Determine when conditions are such that program operations should be suspended for any weather-related reason and adhere to suspension criteria designed by Flood Control and the SBCWA prior to project initiation. |
| Maintain and submit copies of written operations reports to the SBCWA in a timely manner. At a minimum, such reports shall be submitted after each seeding event and should involve a discussion of the above referenced items (see Communications for final report requirements). |

We also propose to have a local technician, Mr. Thomas Segura, available to provide technical part-time support to NAWC on an as-needed basis. Mr. Segura provided these services to NAWC during recent winter seasons. Mr. Segura will primarily be responsible for the installation, recharging, maintenance and de-commissioning of the ground-based flare sites. Mr. Segura lives in Lompoc, which is an excellent central location to service the remotely operated flare sites.

### 2.4 GROUND SEEDING SITES

To support this seeding program, six strategically located ground sites have been identified for operations. Custom engineered, remotely operated, silver iodide pyrotechnic equipment has been installed at each of these six sites. Site locations included: Berros Peak, Mt. Lospe, Harris Grade, Gaviota, West Camino (new location for this winter season) and Gibraltar. The locations of these sites in relation to the project target areas were shown in Figure 1. The SBCWA maintains the site leases for these locations. NAWC will utilize the three northern-most of these sites to target the Husana-Alamo watershed and the three remaining sites to target the Santa Ynez watershed.

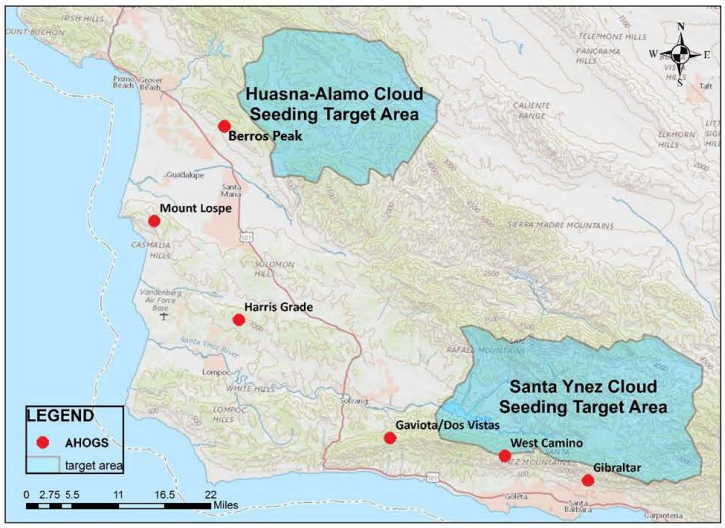


**Figure 1** **Overlay of the two target areas, with their associated ground seeding sites.**

NAWC developed the current AHOGS (Automated High Output Ground Seeding System) design, first utilized during the 2001-2002 water year. This design has been used in subsequent seasons with some upgrades over time. The AHOGS system allows automated, focused seeding material to be releases from strategic ridgeline locations, under program control by the meteorologist with the proper software and access codes. This system gives the project meteorologist the ability to conduct intensive seeding of convective rain bands in various wind flow regimes on a 24/7 basis. Each AHOGS consists of the following onsite components:

- Two flare masts, which hold a total of 32 (150-gram fast-acting AgI) flares
- Spark arrestors enclosing each flare to prevent a fire hazard
- An environmentally sealed control box containing a cellular phone communications system, digital firing sequence relays/controller, data logger and system battery
- A solar panel and charge regulation system to maintain site power
- Cellular phone antenna
- Lightning protection

Each site is controlled via a modem-equipped PC at the operations center, running custom software to manage the flare seeding operations. The meteorologist has the option of firing flares individually in real time, or to program batch firing of any number of flares at selectable intervals, typically 15 minutes apart. The software allows monitoring and reporting of AHOGS site status information, such as flare inventory and battery voltage. These units do not require back up power since they each have their own DC battery that is recharged from a solar panel. These

units have performed very reliably over the years of operations. Figure 2 is a photograph of one of these sites.

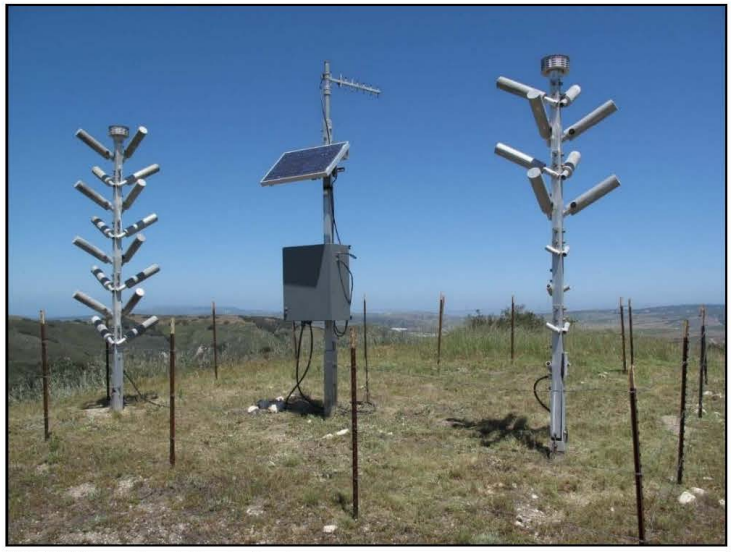

**Figure 2** **AHOGS flare site at Harris Grade**

Figure 3 is a close-up photo of flares mounted in one of the masts. The original AHOGS design was modified in 2005 through the introduction of a NAWC custom designed spark arrestor. These spark arrestors, which fit over each of the flares, were developed to ensure that no large sparks or embers were released from the flares that could pose a fire concern. These arrestors were developed in case of an accidental misfire, and when burning flares at the beginning of a storm event following an extended dry spell. Figure 4 is a photo of a flare burning inside a spark arrestor. Table 2 provides location information on the operational AHOGS sites.

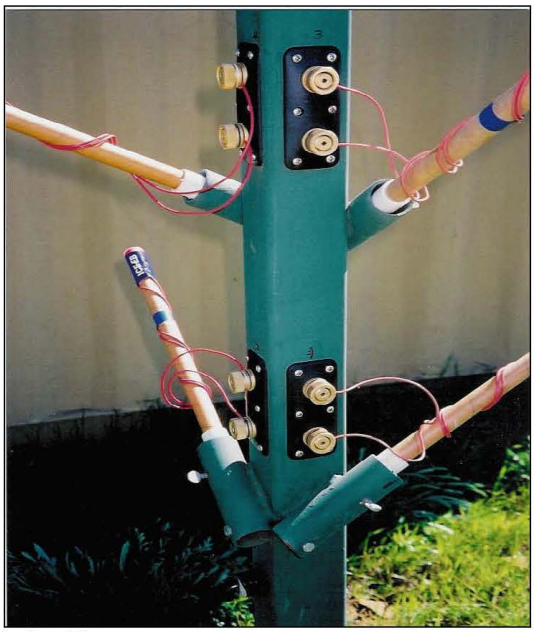

**Figure 3** **Close-up photo of flares**

**Figure 4** **Flare burning inside spark arrestor**

**Table 2**
**Active AHOGS Site Locations**

| Location | Latitude | Longitude | Elevation (ft.) |
|---|---|---|---|
| **Berros Peak** | 35.062 | -120.437 | 1610 |
| **Mt. Lospe** | 34.897 | -120.595 | 1570 |
| **Harris Grade** | 34.719 | -120.402 | 1204 |
| **Gaviota** | 35.519 | -120.085 | 2580 |
| **West Camino** | 34.053 | -119.847 | 2860 |
| **Gibraltar** | 35.052 | -120.434 | 1540 |

The basic concept in the Santa Barbara II research program was to place as much seeding material as possible into the warmer updraft regions of the convective bands with cloud tops colder than freezing (ideally -4 to -12° C). The 400-gram flares (known as LW 83's) were considered very high output at the time, but have been replaced by even more effective (in terms of nuclei production) flares utilized by NAWC beginning in 2001-2002. Each 150-gram pyrotechnic flare will emit roughly 15 grams of a fast-acting silver iodide complexed seeding material, during a burn time of approximately four minutes. In some cases, smaller flares may be used in place of the 150-gram flares. If smaller flares are used they will be billed proportionately based on relative Silver Iodide Content.

### 2.5 SEEDING CRITERIA

Seedable storms forecast to produce precipitation quantities under 2.0 inches in a 24 hour period will be seeded, with a focus on targeting convection bands. As the season progresses, progressively higher Quantitative Precipitation Forecasts (QPF) events may be seeded and will depend on ground cover response and slope erosion.

### 2.6 TARGETING

In general, flares should be timed to ignite as the leading edge of a convective band approaches the ground site locations and target areas. Low-level winds from the surface up to cloud base height need to be considered for proper targeting of seeding material, as well as temperatures and cloud structure of the system. NAWC will employ selective targeting to affect the designated areas, and avoid impacts to burn areas or other areas that are specifically excluded from the intended areas of effect. These areas are specified in the suspension criteria. NAWC has a variety of tools including the HYSPLIT model (see Section 2.10) to predict the seeding plume dispersion in real time from any release point(s). Another product, Velocity Azimuth Displays (VAD) provide a time plot of wind direction and speed at 1000-foot intervals above the surface derived from the Doppler capability on the NWS NEXRAD weather radars. These displays, which are updated every six minutes, allow the meteorologist to predict the direction of seeding plumes released from ground or airborne sources, which can be used in conjunction with HYSPLIT plume predictions.

### 2.7 SUSPENSION CRITERIA

Cloud seeding will be suspended if high intensity precipitation events occur. High intensity is defined as a storm forecasted to produce greater than 0.8 inches of precipitation in a one-hour period or greater than 2.0 inches of precipitation in a given 24hr period. Additionally, suspensions may occur based on flash-flood advisories or warnings as issued by Santa Barbara County Flood Control personnel, or nationally recognized meteorological services.

In addition to the standard suspension criteria established, additional criteria have been established for portions of the Santa Ynez watershed (see figure 5). Due to a forest fire that occurred roughly 3 years ago, the south easternmost portions of this target area are still considered to be in recovery. To further protect this area, cloud seeding suspension criteria have been enhanced for the Santa Ynez watershed, and include the following suspension provisions:

- During periods of strong westerly flow NAWC will not seed from the Gibraltar site. This site may still be used during periods of southerly and southwesterly flow where seeding effects will not significantly impact precipitation rates in the recovering areas.
- Seeding from Dos Vistas and the new West Camino site will not occur during periods of westerly flow, if 24-hour precipitation is forecasted to exceed 1.5 inches, or if hourly precipitation in or around the area of the burn scar is forecasted to exceed about 0.6 inches during any given 1-hour period. These updated suspension thresholds would apply only to storm periods exhibiting due westerly (or near due westerly) flow.

Figure 5 shows the target area in relation to the Thomas Fire burn perimeter, with the zone of overlap highlighted in the figure. The special suspension criteria apply to this area.

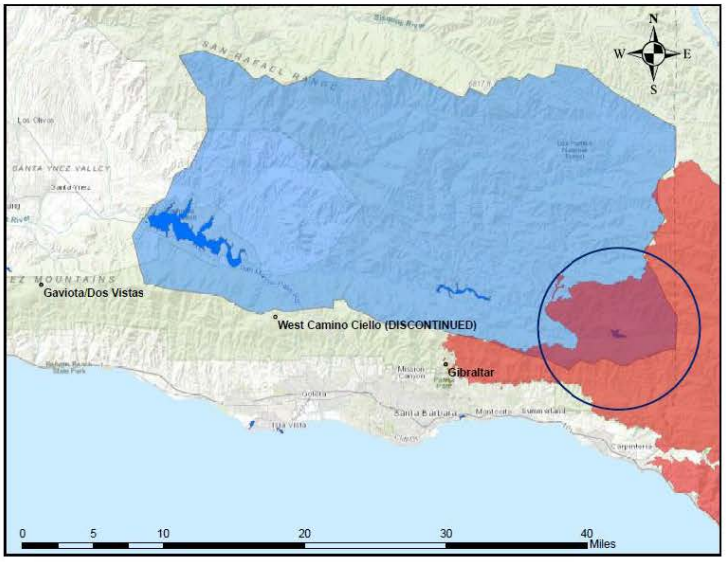


**Figure 5** **Locations of the Target Area (blue), the Thomas Burn Area (red), and overlap zone (purple and circled)**

As in previous seasons, NAWC reserves the right to suspend seeding at their discretion if they have legitimate concerns for public safety. NAWC will also suspend seeding upon the request to do so, by authorized Santa Barbara County employees.

### 2.8 EQUIPMENT, FACILITIES, AND MAINTENANCE

NAWC agrees to provide routine and special maintenance of all seeding equipment. All equipment will be maintained in good working condition throughout the duration of the contract. Equipment will include the AHOGS ground sites and computers. NAWC does not propose any operations that would require propane.

An operations center will be located at NAWC's headquarters located in Sandy, Utah. This operations center is equipped with computers and the necessary software to conduct operations around the clock as needed. In addition to this operations center, NAWC meteorologist have similar capabilities to conduct operations from home, so they can monitor the weather conditions and make seeding decisions on a 24/7 basis.

NAWC will be able to respond quickly in setting up the seeding program. One reason for this fast response capability is that most of the AHOGS equipment is already on site at the ground sites. NAWC would, however, need time to install the new West Comino Site. Consequently, we could bring this ground-based program to operational status in approximately two to three weeks following receipt of an approved contract.

### 2.9 METEOROLOGICAL DATA

There is a wealth of weather information available online, with a number of products that are useful in the conduct of cloud seeding operations. The following list contains some of the meteorological products used in the conduct of this program:

- The SBCWA Alert weather network.
- The National Weather Service surface, upper-air and precipitation observations and predictions (e.g., the GFS, NAM and WRF models).
- The California River Forecast Center Quantitative Precipitation Forecasts (QPFs).
- Satellite images; infrared (IR), water vapor (WV), or visible. IR images provide information both day and night, with data on cloud top temperatures.
- National Weather Service NEXRAD (Next Generation Radar) data are available in near real time at approximately 5–6-minute intervals from a variety of online sources. There are two primary NEXRAD sites that provide coverage of Santa Barbara County: Vandenberg AFB and Los Angeles (actually located near Ojai).
- Skew-T upper-air soundings from Vandenberg Air Force Base. The skew-T sounding is a plot of temperature, dew point, and winds vs. height, observed by a radiosonde (balloon borne weather instrument).
- Rain gage and local weather station data
- Santa Barbara Flood Control District precipitation gauge network
- National Weather Service weather watches, weather warnings, and flash flood warnings.

### 2.10 COMPUTER MODELING

NAWC will utilize specialized computer models in the conduct of this program. These models are of two basic types: 1) those that forecast a variety of weather parameters useful in the conduct of the cloud seeding program (e.g. NAM or WRF) and 2) those that predict the transport and diffusion of seeding materials (e.g., HYSPLIT). NAWC also uses the High-Resolution Rapid Refresh (**HRRR**) model which is a special version of the WRF model. The WRF, HRRR and HYSPILT models will be discussed separately in the following.

In some previous winter seasons NAWC had used the standard National Oceanic and Atmospheric Administration (NOAA) atmospheric models: NAM (formerly ETA) and GFS in forecasting seedable events and associated parameters of interest (e.g. temperatures, winds, precipitation). NAWC will continue to use the NAM and GFS models, especially for longer range forecasts. A more sophisticated model will be used for shorter range forecasts. This is the Weather Research and Forecasting (WRF) model developed by the National Center for Atmospheric Research (NCAR) and NOAA. This model has shown considerable skill in predicting precipitation, temperatures, and wind fields along with a variety of other parameters of interest to operations. There are several web sites that provide WRF model output (e.g., NOAA, NCAR, and University of Utah).

NAWC also utilizes plume dispersion predictions from the HYSPLIT model, which inputs user data specific to locations of interest, to assist in making seeding decisions. NAWC will continue the use of this model for plume targeting purposes as needed during the 2021-2022 winter season.

The Weather Research and Forecasting (WRF) Model is mesoscale numerical weather model designed to serve both operational forecasting and atmospheric research needs. WRF is suitable for a broad spectrum of applications across scales ranging from meters to thousands of kilometers.

NAWC first utilized NOAA's Earth Systems Research Laboratory's High Resolution Rapid Refresh (HRRR) version of the WRF model during the 2013-2014 winter season and has continued to use this model for operations. The WRF has a 3-km grid spacing (compared to the more standard grid model spacing of 12km in the NAM and GFS models), and it re-initializes every hour using the latest radar and other observations. This improves the accuracy with respect to details of a storm event on the local scale. The NAM and GFS models are currently re-initialized every 6 hours. Hourly forecast outputs from the HRRR model are available for a variety of parameters out to 15 hours. Table 2-3 provides a summary of some forecast parameters of interest in conducting a cloud seeding program.

**Table 2-3**
**HRRR Forecast Parameters of Interest**

| Parameter | Application |
|---|---|
| **1km above ground level reflectivity** | Forecast of convection band locations based on radar returns 1km above ground |
| **Composite reflectivity** | Forecast of convection band locations using reflectivity values from different scan elevations. This is useful when bands approach the radar site since low elevation scans may go underneath the bands. |
| **Max 1km above ground level reflectivity** | Forecasts that pinpoint the location of the heart of the convection bands |
| **1 hour accumulated precipitation** | Forecasts of radar derived estimates of precipitation reaching the ground in a one-hour period (QPF). |
| **Total accumulated precipitation** | Forecasts of radar derived estimates of precipitation reaching the ground for a specified time period, for example 1-6 hours in the future (QPF). |
| **850 and 700 mb winds** | Forecasts of the 850 mb (~5,000-foot level) and 700 mb (~ 10,000 foot) wind direction, useful in targeting of seeding material |
| **850 and 700mb temperature** | NAWC uses these reference levels, especially 700 mb temperature, to assess seeding potential from ground-based sites |
| **700 mb vertical velocity** | Forecasts the strength of the upward or downward movement of the air mass. Stronger updrafts favor transport of seeding material to colder, more effective cloud regions. |
| **Echo top height** | Forecasts of cloud radar echo tops, useful in determining whether the cloud tops are cold enough for silver iodide to be effective. Ideal cloud top temperatures are between -5 and -25° C. |

With the design of the program being focused on seeding convection bands, forecasts of convective band locations and evolution are important to the program. Seeding decisions for ground-based sites can be made using real-time NEXRAD radar information indicating when a convection band is approaching a particular seeding site. The precipitation type forecasts are useful when considering suspension criteria.

The HYSPLIT (HYbrid Single-Particle Lagrangian Integrated Trajectory) model is a result of a joint effort between NOAA and Australia's Bureau of Meteorology. HYSPLIT computes the dispersion of a plume of particles released into the atmosphere from a given point or set of points. The model is capable of real-time predictions of plume transport using NAM model data. Post-hoc simulations can also be conducted with archived model data. Figure 6 contains an example of a HYSPILT simulation from a storm that impacted the Huasna-Alamo target area.

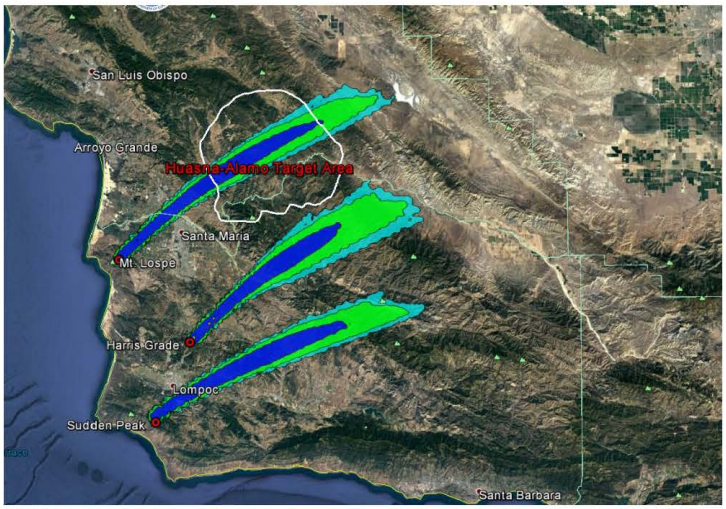


**Figure 6** **HYSPLIT Model Output for Mt. Lospe, Harris Grade and Sudden Peak during a storm event**

### 2.11 COMMUNICATIONS

NAWC shall keep SBCWA informed of the program status at all times including equipment failures and personnel changes affecting the program. NAWC shall notify Flood Control and SBCWA personnel at the initiation and conclusion of seeding activities and provide SBCWA with records of seeding operations and duration at the conclusion of each storm event.

In addition, NAWC shall provide SBCWA a **draft** copy of the final report by 40 days following the termination of a particular season's activities. The final report will be provided 20 days after the draft is reviewed by SBCWA, and will be provided in both digital and print formats. Five (5) print copies will be provided. This report shall include a description of equipment and techniques used, a log of all operations conducted, the total amount of seeding solution dispensed from both ground and aerial operations, a summary of overall weather conditions and storm events and an assessment of program results. NAWC shall obtain approval from SBCWA before disseminating any information regarding the program.

### 2.12 COLLABORATION WITH SAN LUIS OBISPO

The county of San Luis Obispo is entering their 3rd season of a 3-year agreement to provide cloud seeding to benefit the Lopez Lake Watershed. Due to the watershed's proximity to the Berros Peak cloud seeding equipment it was determined that this equipment site could benefit both Santa Barbara and San Luis Obispo Counties. Through coordination with the two counties a credit has been applied to the Santa Barbara program on behalf of San Luis Obispo to compensate Santa Barbara County for the regular use of Berros Peak Equipment to benefit the Lopez Lake Watershed, and occasional use of the Mt Lospe site for the same purpose. All flares ignited under wind regimes that

will direct the seeding agents towards San Luis Obispo are paid for by San Luis Obispo County. During storms where seeding benefits both counties, flare costs are split between the two counties.

### 2.13 COSTS

Costs estimates and the program budget are provided as a separate document.

## 3.0 REFERENCES

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# EXHIBIT B

## PAYMENT ARRANGEMENTS
## Periodic Compensation (with attached Schedule of Fees)

A. For CONTRACTOR services to be rendered under this Agreement, CONTRACTOR shall be paid a total contract amount, including cost reimbursements, not to exceed **$204,600**.

B. Payment for services and /or reimbursement of costs shall be made upon CONTRACTOR's satisfactory performance, based upon the scope and methodology contained in **EXHIBIT A** as determined by COUNTY. Payment for services and/or reimbursement of costs shall be based upon the costs, expenses, overhead charges and hourly rates for personnel, as defined in **Attachment B1** (Schedule of Fees). Invoices submitted for payment that are based upon **Attachment B1** must contain sufficient detail to enable an audit of the charges and provide supporting documentation if so specified in **EXHIBIT A.**

C. **Monthly,** CONTRACTOR shall submit to the COUNTY DESIGNATED REPRESENTATIVE an invoice or certified claim on the County Treasury for the service performed over the period specified. These invoices or certified claims must cite the assigned Board Contract Number. COUNTY DESIGNATED REPRESENTATIVE shall evaluate the quality of the service performed and if found to be satisfactory and within the cost basis of **Attachment B1** shall initiate payment processing. COUNTY shall pay invoices or claims for satisfactory work within 30 days of receipt of correct and complete invoices or claims from CONTRACTOR.

D. COUNTY's failure to discover or object to any unsatisfactory work or billings prior to payment will not constitute a waiver of COUNTY's right to require CONTRACTOR to correct such work or billings or seek any other legal remedy.

E. CONTRACTOR shall comply with the California Labor Code, including but not limited to the payment of prevailing wage when required. The general prevailing wage rates determined by the Director of Industrial Relations, for the county or counties in which the work is to be done, are on file at the office of the Santa Barbara County Water Agency, 130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101. Copies of these general prevailing wage rates shall be made available to any interested party on request. Changes, if any to the general prevailing wage rates will be available at the same location. The prevailing wage rates are also available from the California Department of Industrial Relations' Internet web site at http://www.dir.ca.gov/dlsr/pwd.

# ATTACHMENT Bl
# 2021-2022 CLOUDSEEDING PROGRAM

FIXED AND REIMBURSABLE COST FOR A FOUR MONTH GROUND WEATHER MODIFICATION PROGRAM FOR TWITCHELL RESERVOIR AND LAKE CACHUMA WATERSHEDS

| | | | |
|---|---|---|---|
| 1. | **Set-up, Removal, and Reporting Fixed Costs**<br>(includes $2,000,000 professional liability insurance) | | $40,000 |
| 2. | **Monthly Fixed Costs**<br><br>Four months @ $25,800/month<br>(ground only for Upper Santa Ynez and Twitchell watersheds) | | $103,200 |
| 3. | **Estimated Reimbursable Costs**<br><br>400 ground flares @ $111/flare | | $44,400 |
| 4. | **New ground site installation** | | $14,000 |
| 5. | **Optional 2-week extension**<br>(April 1-April 15) | $9,000 | |
| 6. | **Credit from San Luis Obsipo County**<br>(cost share for Los Berros ground site) | | ($6,000) |
| 7. | **Estimated total cost** | | **$204,600** |

- **NOTE — invoicing schedule will be the following:**

**1/2 the setup cost ($33,000) will be invoiced on November 1st, the beginning date of the program. The other 1/2 of the setup cost shall be invoiced upon receipt of the final report and upon agreement by Santa Barbara County Water Agency that all conditions of the contract are met. Monthly invoices for fixed costs as well as reimbursable costs shall be submitted at the end of each operational month.**

# EXHIBIT C

## Indemnification and Insurance Requirements (For Professional Contracts)

INDEMNIFICATION

CONTRACTOR agrees to indemnify, defend (with counsel reasonably approved by COUNTY) and hold harmless COUNTY and its officers, officials, employees, agents and volunteers from and against any and all claims, actions, losses, damages, judgments and/or liabilities arising out of this Agreement from any cause whatsoever, including the acts, errors or omissions of any person or entity and for any costs or expenses (including but not limited to attorneys' fees) incurred by COUNTY on account of any claim except where such indemnification is prohibited by law. CONTRACTOR's indemnification obligation applies to COUNTY's active as well as passive negligence but does not apply to COUNTY's sole negligence or willful misconduct.

NOTIFICATION OF ACCIDENTS AND SURVIVAL OF INDEMNIFICATION PROVISIONS

CONTRACTOR shall notify COUNTY immediately in the event of any accident or injury arising out of or in connection with this Agreement. The indemnification provisions in this Agreement shall survive any expiration or termination of this Agreement.

INSURANCE

CONTRACTOR shall procure and maintain for the duration of this Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONTRACTOR, its agents, representatives, employees or subcontractors.

A. Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. **Commercial General Liability (CGL):** Insurance Services Office (ISO) Form CG 00 01 covering CGL on an "occurrence" basis, including products-completed operations, personal & advertising injury, with limits no less than $2,000,000 per occurrence and $2,000,000 in the aggregate.
2. **Automobile Liability**: ISO Form Number CA 00 01 covering any auto (Code 1), or if CONTRACTOR has no owned autos, hired, (Code 8) and non-owned autos (Code 9), with limit no less than $1,000,000 per accident for bodily injury and property damage.
3. **Workers' Compensation**: as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease.
4. **Professional Liability** (Errors and Omissions) Insurance appropriate to the CONTRACTOR'S profession, with limit of no less than $1,000,000 per occurrence or claim, $2,000,000 aggregate.

If the CONTRACTOR maintains higher limits than the minimums shown above, the COUNTY requires and shall be entitled to coverage for the higher limits maintained by the CONTRACTOR. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the COUNTY.

B. Other Insurance Provisions

The insurance policies are to contain, or be endorsed to contain, the following provisions:

1. **Additional Insured** – COUNTY, its officers, officials, employees, agents and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the CONTRACTOR including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the CONTRACTOR's insurance at least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10 and CG 20 37 if a later edition is used).
2. **Primary Coverage** – For any claims related to this Agreement, the CONTRACTOR's insurance coverage shall be primary insurance as respects the COUNTY, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the COUNTY, its officers, officials, employees, agents or volunteers shall be excess of the CONTRACTOR's insurance and shall not contribute with it.
3. **Notice of Cancellation** – Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the COUNTY.
4. **Waiver of Subrogation Rights** – CONTRACTOR hereby grants to COUNTY a waiver of any right to subrogation which any insurer of said CONTRACTOR may acquire against the COUNTY by virtue of the payment of any loss under such insurance. CONTRACTOR agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation, but this provision applies regardless of whether or not the COUNTY has received a waiver of subrogation endorsement from the insurer.
5. **Deductibles and Self-Insured Retention** – Any deductibles or self-insured retentions must be declared to and approved by the COUNTY. The COUNTY may require the CONTRACTOR to purchase coverage with a lower deductible or retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention.
6. **Acceptability of Insurers** – Unless otherwise approved by Risk Management, insurance shall be written by insurers authorized to do business in the State of California and with a minimum A.M. Best's Insurance Guide rating of "A- VII".
7. **Verification of Coverage** – CONTRACTOR shall furnish the COUNTY with proof of insurance, original certificates and amendatory endorsements as required by this Agreement. The proof of insurance, certificates and endorsements are to be received and approved by the COUNTY before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the CONTRACTOR's obligation to provide them. The CONTRACTOR shall furnish evidence of renewal of coverage throughout the term of the Agreement. The COUNTY reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.
8. **Failure to Procure Coverage** – In the event that any policy of insurance required under this Agreement does not comply with the requirements, is not procured, or is canceled and not replaced, COUNTY has the right but not the obligation or duty to terminate the Agreement. Maintenance of required insurance coverage is a material element of the Agreement and failure to maintain or renew such coverage or to provide evidence of renewal may be treated by COUNTY as a material breach of contract.

9. **Subcontractors** – CONTRACTOR shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and CONTRACTOR shall ensure that COUNTY is an additional insured on insurance required from subcontractors.
10. **Claims Made Policies** – If any of the required policies provide coverage on a claims-made basis:
    i. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.
    ii. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of contract work.
    iii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the CONTRACTOR must purchase “extended reporting” coverage for a minimum of five (5) years after completion of contract work.
11. **Special Risks or Circumstances** – COUNTY reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

Any change requiring additional types of insurance coverage or higher coverage limits must be made by amendment to this Agreement. CONTRACTOR agrees to execute any such amendment within thirty (30) days of receipt.

Any failure, actual or alleged, on the part of COUNTY to monitor or enforce compliance with any of the insurance and indemnification requirements will not be deemed as a waiver of any rights on the part of COUNTY.