San Juan Mountains Program (SJM Program) 2025-2026 Winter Cloud Seeding Program

Includes seeding for the following regions:
West Dolores and Telluride (WDT)
Western San Juan's (WSJ)
Eastern San Juan's (ESJ)

- WDT Sponsors: Dolores Water Conservancy District, Montezuma Valley Irrigation Company, Southwestern Water Conservation District, Telluride Skiing Co., and Colorado Water Conservation Board.
- WSJ Sponsors: Purgatory Ski Area, Animas La Plata Water Conservancy District, Dolores Water Conservancy District, Southwestern Water Conservation District, and New Mexico Interstate Stream Commission.
- ESJ Sponsors: Pine River Irrigation District, Florida Water Conservancy District, Florida Consolidated Ditch Company, San Juan Water Conservancy District, Southwestern Water Conservation District, and New Mexico Interstate Stream Commission.

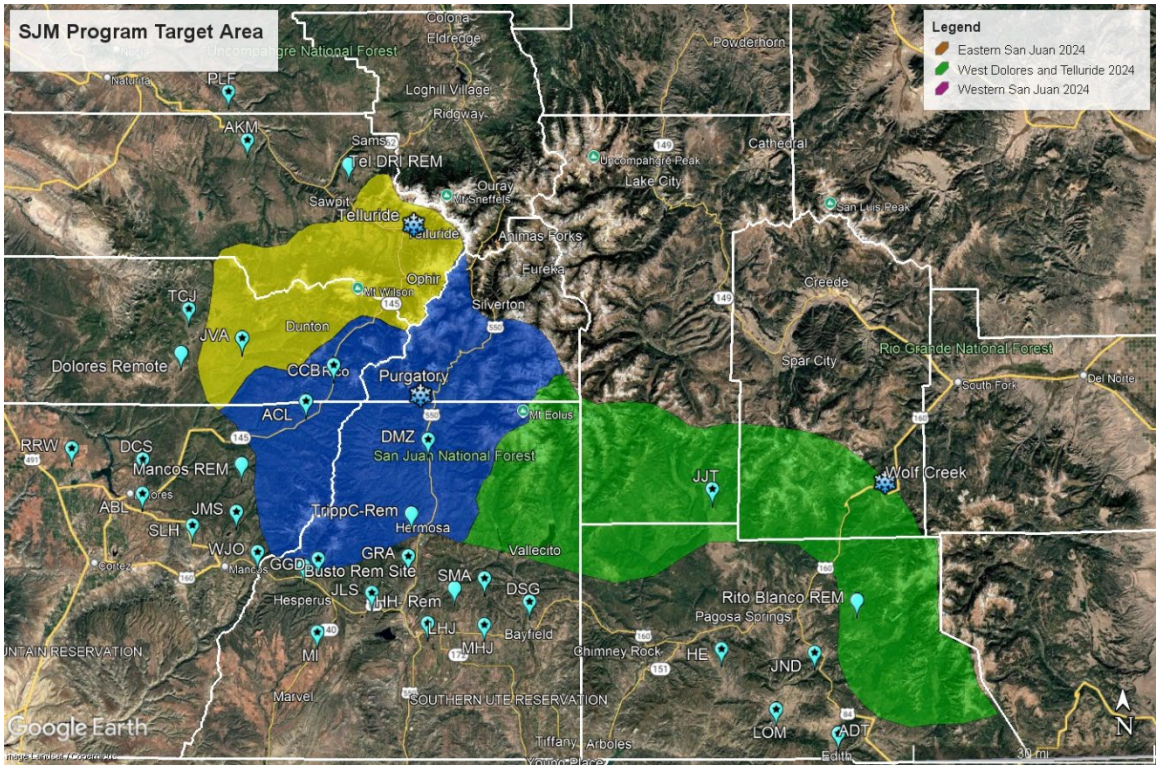
State of Colorado Weather Modification Permit (2025-02)

Operational Plan

The SJM Program is permitted to run from November 1, 2025, to April 15, 2026, and will be operated by Western Weather Consultants LLC (WWC). Seeding can begin on December 1, 2025, for non-ski-area participants. Seeding for the State, Telluride, and Purgatory Ski Resorts may start as early as November 1, 2025. An extension of the program may be implemented if funding is available and appropriate seeding opportunities exist. At all times, WWC shall conduct the SJM Program in compliance with all applicable State and Federal laws and regulations governing weather modification activities, as well as other relevant laws. Up to 40 Cloud Seeding Nuclei Generators (CNG) can be used for the SJM Program.

Target Area

The primary target area for the SJM Program is defined as follows: The San Juan Mountains above 8,500 feet mean sea level, mainly targeting the upper regions of the West Dolores, San Miguel, Dolores, La Plata, Animas, Florida, Pine, San Juan, and Blanco River Basins, as well as Telluride and Purgatory Ski Resorts. The SJM Program is designed, operated, and intended to have an impact only in the Target Area. Blue pins with stars denote Manual Generator locations. Solid blue pins denote Remote Generator sites.



The SJM Program is divided into three regions: WDT (Yellow), WSJ (Blue), and ESJ (Green).

Operational Procedure

The operational procedures used to enhance snowpack in the selected target areas are to produce plumes of silver iodide crystals (artificial cloud nuclei) at rates between 5 and 28 grams per hour from multiple ground-based CNGs to be diffused by favorable wind flows into selected storms or cloud types suitable for precipitation increases meeting the

seeding criteria over the Target Area. An analysis of low-level wind fields, cloud characteristics, stability parameters, terrain features, and synoptic meteorological features will determine the network of generators that best seed the cloud system over the Target Area for each favorable weather system. This analysis will also provide a method for adjusting the network as new weather information becomes available. Seeding events will be limited to portions of selected favorable weather systems with expected or forecasted precipitation rates and associated augmentation potentials capable of producing additional precipitation of at least one-tenth of an inch of water or more per 24 hours of seeded duration. Any selected favorable weather events with the augmentation rate stated above that are expected to last less than 6 hours require prior approval from the Manager of the SWCD and/or Andrew Rickert with the CWCB. Seeding for the ski areas is exempt from the 6-hour minimum storm duration if the storm is forecast to produce the required precipitation amount of water over 24 hours.

When the "best" initial network of generators has been selected to seed an established weather system, the operators are notified and provided with a specific time to start the generator and a particular burn rate. On the same call, they will be given a specific turn-off time, which may be subject to change if the meteorologist at WWC notices significant changes in the weather system during the seeding event. Incoming weather data into the forecast office allows continuous monitoring of any changes in conditions and any adjustments or terminations in the seeding operation. Following each seeding operation, each generator operator will submit a written report detailing the actual operational times, verifying the seeding rates, and recording any weather observations or operational discrepancies that occurred during the required operating period. No aircraft will be used for seeding for this Program. The seeding criteria WWC uses for seeding operations are as follows:

- Cloud bases are at least 500 feet below the mean mountain barrier crest of the Target Area. They are forecast to move lower in elevation from the onset of seeding and continue throughout the seeding period. The weather system is predicted to have clouds with vertical heights and moisture content capable of producing natural precipitation.
- Temperatures at 500 feet below the mean mountain crest within the Target Area are -5 degrees C. (23 degrees F.) or colder, and are forecast to become colder if it is at -5 degrees C.
- Wind directions and speeds from the surface to the cloud base are observed and forecast to favor the movement into the intended Target Area of the silver iodide nuclei released from the ground-based generator sites.
- There are no stable regions or atmospheric inversions between the surface and cloud base, preventing the vertical dispersion of the silver iodide particles from the surface to at least -5 degrees C. (23 degrees F.) level or colder within the cloud system.
- The temperature at approximately 10,000 feet (700 MB level) is warmer than -16 degrees C. (3 degrees F.)

Generator Locations: (See attached)

WWC routinely monitors weather conditions throughout the winter operating period for systems with cloud-seeding potential. Most of the data used comes from the National Weather Service (NWS) websites, the University of Wyoming, Pennsylvania, and Texas A&M Weather websites, the National Center for Atmospheric Research (NCAR) website, the National Oceanic and Atmospheric Administration (NOAA) website, and Pivotalweather.com for short- and long-range model forecasts. Numerous forecasting websites beyond the previously listed are used, but these tend to be the preferred ones. Other available resources are the Colorado Department of Transportation (CDOT) website to monitor road conditions and concerns, the Colorado Avalanche Information Center (CAIC) for Weather Research Forecasting (WRF) point forecasts, as well as avalanche and potential avalanche conditions in and around the Target Area including the Natural Resources Conservation Service (NRCS) website to monitor snowpack in the Target Area as recorded by the network of SNOTELs in Colorado. Snowpack accumulation is monitored from SNOTEL stations within the Target Area, and the first detailed analysis of snow accumulation is completed using these measurements.

From these sites, we review and, at times, archive weather data such as surface and upper air data, synoptic surface maps, significant level maps, model forecast data, rawinsonde data, satellite and radar data, surface observations, webcam images, other forecast aids. This data assists in selecting favorable storms for modification and monitoring suspension criteria.

Suspension Criteria

The proposed Suspension Criteria will safeguard the program and ensure that risks associated with cloud seeding have been addressed. WWC will retain the right to suspend operations if the weather system becomes unfavorable. Facilities will be maintained to gather and analyze weather data, providing a continuous weather watch. WWC will communicate with the Program Sponsors, the National Weather Service (NWS), the U.S. Forest Service, and the Department of Natural Resources / Colorado Water Conservation Board regarding potential adverse conditions. The WWC forecast and operations center will monitor weather patterns over Colorado and the Western United States during the winter operating period, seven days a week. Meteorologists permitted by the State of Colorado to operate weather modification programs will determine whether weather events are suitable for precipitation augmentation through cloud seeding.

Before initiating seeding operations, a thorough hazard analysis will be completed for all weather systems deemed suitable. It will be evaluated for its potential to develop into a blizzard, severe storm, or heavy precipitation, possibly associated with a significant

avalanche risk. Additionally, the impact of the weather event on ranching, agriculture, wildlife, highway travelers, municipal interests, and industry will be assessed. This evaluation will focus on the areas to be seeded, along with considerations of potential adverse effects on adjacent areas that may be influenced by increased precipitation. No seeding will be initiated during a period determined to have a high potential hazard evaluation. Once a seeding operation has been undertaken, monitoring of existing and forecasted weather conditions will continue throughout the seeding operation. All new meteorological information and generator reports from generator operators, the State Patrol, and field maintenance personnel in the seeded areas will be assessed. The Colorado Avalanche Information Center (CAIC) has modified its website to include a "Cloud Seeder" avalanche hazard level suspension criteria page for all mountain passes in Colorado. Levels of Notice, Caution, and Warning are assigned to the passes, with warnings being used as triggers for the temporary suspension of neighboring generators. Changing weather conditions that indicate the onset of potentially severe or hazardous weather will result in suspending seeding operations during these conditions. Snowpack accumulation will be monitored at all SNOTEL stations within the target area, and the first detailed analysis of snow accumulation will be completed using these measurements. Snowpack evaluations indicate that minor flooding and streamflow problems can occur when the late winter snowpack reaches 155% of normal. More substantial flooding problems can be anticipated when the late winter snowpack exceeds 175% of normal.

Since the SJM Program is designed for reasonable levels of snowpack enhancement for an outlook of adequately abundant summertime water supply for storage use, we propose to suspend seeding operations in any significant portion of a seeding area when one or more of the following takes place: Snow Water Equivalent Thresholds exceed the following: 175% of average on December 1st, 175% of average on January 1st, 160% of average on February 1st, 150% of average on March 1st and 140% of average on April 1st. The following link can be used to see a map that will show the snowpack percentages of normal:

https://www.nrcs.usda.gov/wps/portal/wcc/home/quicklinks/imap

The CWCB Director or his or her designee will determine where and how snowpack water equivalents are to be measured, including at selected "SNOTEL" sites. The CWCB Director or their designee may permit weather modification operations to continue in a portion of the operation target area where snowpack water equivalents are below these suspension criteria percentages if the operation will not impact the area where snowpack water equivalents are above these suspension criteria percentages. These

thresholds are designed to keep the seeding effect within the natural variability of the local climate as measured at each SNOTEL station. This comparative normal for these representative snow observation sites will be the long-term Snow Water Equivalent Median dataset from 1991 through 2020, as published by the Natural Resources Conservation Service (NRCS). WWC must suspend all weather modification operations whenever one of the following is issued by the NWS Hazardous Weather Statements that impact any part of the Target Area:

a. An urban or small stream flood advisory.
b. A blizzard warning.
c. A flash flood warning; or
d. A severe thunderstorm warning.

Operations may resume after these statements expire.

As required by the "Colorado Weather as required by the "Colorado Weather Modification Rule and Regulations" effective July 1, 2012, WWC notifies the local NWS weather forecast office, CAIC, the County emergency managers, and the CSU Colorado Climate Center of the intended weather modification activities and provide WWC's contact information before the 2025-2026 season of weather modification operations.

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