

NORTH AMERICAN INTERSTATE
WEATHER MODIFICATION COUNCIL

Reno, Nevada

September 15, 2005

The meeting of the North American Interstate Weather Modification Council was called to order by Chairman Arlen Huggins, on September 15, 2005, at 9:00 a.m. at the Desert Research Institute, Reno, Nevada. Roll call confirmed the following members present: John Andrew, State of California; Joe Busto, State of Colorado; Arlen Huggins, State of Nevada; Darin Langerud, State of North Dakota; LeNor Dollinger, North Dakota Weather Modification Association; Mike Mathis, State of Oklahoma; George Bomar, State of Texas; Dave Cole, State of Utah; Barry Lawrence, State of Wyoming; and Tom Ryan, Metropolitan Water District of Southern California.

Others present were Dr. Joseph Golden and Steve Hunter.

MINUTES

Darin Langerud moved to approve the minutes of April 27, 2005 as distributed. Second by Mike Mathis. Motion carried.

FINANCIAL STATUS REPORT

Arlen Huggins presented and reviewed the financial status report as of 9/15/2005. The report showed a balance of \$29,671.46.

Joe Busto made the motion to secure a bank card on the Council account which will facilitate on-line banking of the account. Seconded by Barry Lawrence. Motion carried.

Darin Langerud moved to accept the 9-15-05 financial status report. Second by Mike Mathis. Motion carried.

EXECUTIVE BOARD VACANCY

Discussion was held on the vacant position of Secretary/Treasurer for the Council. Mr. Huggins reported he has received the Council documents from Dr. Warburton's family.

The Council's by-laws do not cover filling vacancies on the Executive Board. It was felt the Council could address this issue by a quorum of membership. Mr. Huggins offered to continue to carry out the duties of the Secretary-Treasurer until the regular elections next spring. This would eliminate the need to change banks at this time.

George Bomar made the motion to fill vacancies on the Executive Board by appointment by the Chairman in consultation with the remaining members of the Executive Board, and then election by the membership at the next election of officers of the Council. Seconded by Mike Mathis.

Following further discussion, Barry Lawrence moved to amend the motion to add the word "mid-term" vacancies on the Executive Board. Second by Darin Langerud. The vote on the amended motion was 9 votes aye, 0 nay. Motion carried.

MEMBERSHIP REPORT

Mr. Huggins reported the Metropolitan Water District of Southern California has joined the Council as a new affiliate member. Mr. Tom Ryan will serve as Council representative for the MWD.

Further discussion was held regarding prospective members. Mr. Huggins suggested members send names of prospects to him or LeNor Dollinger.

STATE REPORTS

Metropolitan Water District of Southern California – Tom Ryan distributed informational materials regarding the Metropolitan Water District and briefly reviewed the delivery and distribution system, facilities and equipment. The MWD mission is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Texas – George Bomar reported 8 rain enhancements projects covering 37.4 acres are currently in operation across West and South Texas. This is down from 12 in previous years. Two of these project are dual purpose and include hail suppression programs. Operating costs in 2005 will be assumed exclusively by the water districts and weather modification associations that sponsor the cloud seeding activities. No new state funding for weather modification operations materialized during the 79th session of the Texas Legislature. No changes in current weather modification law in Texas were made during the Legislative session.

Mr. Bomar also distributed materials outlining the efforts being made through the Southern Plains Experiment in Cloud Seeding of Thunderstorms for Rain Augmentation (SPECTRA). These studies are funded by the US Bureau of Reclamation and administered by the Texas Department of Licensing and Regulation (TDLR).

Oklahoma – Mike Mathis reported there are no operations on-going in Oklahoma. There has been no activity at the legislative level regarding weather modification activities.

Wyoming – Barry Lawrence distributed and reviewed a summary of the Wyoming Weather Modification Five-Year Pilot Program. The program consists of two proposed target areas in two diverse and widely separated areas within the state. These areas are the Medicine Bow/Sierra Madre Mountains and the Wind River Range. The pilot projects (operations, monitoring and evaluation) will continue for five years to account for natural variability, which will demonstrate the technology in a range of climatic conditions.

Mr. Lawrence reported they are now in the permitting process which could take some time due to the large percentage of the target area being state and federal lands. Permits for these areas will involve the National Environmental Policy Act (NEPA). Weather Modification, Inc., Fargo, ND is contracted to carry out operations while the National Center for Atmospheric Research (NCAR) will do the evaluations.

Utah – Dave Cole reviewed a summary of the 2004-2005 winter season projects carried out in Utah. There were five active projects. A total of 138 ground generators were used during the projects. The total cost for these projects was \$356,100 of which the state paid \$132,100.

During the projects cloud seeding was suspended in three large drainages because the Snow Water Equivalent (SWE) exceeded the suspension criteria due to a high snow pack.

A study by the Division of Water Resources estimated the average annual increase in runoff due to cloud seeding to be about 250,000 acre-feet (13%) for target areas seeded during the 1999-2000 season. The estimated cost of the water developed was about one dollar per acre-foot. This study is being updated using a more conservative estimate of the effect of cloud seeding and 4 additional years of data. The estimated average annual increase in runoff is 223,000 acre-feet making the total cost of the water development approximately \$1.70 per acre-foot.

Colorado – Joe Busto distributed copies of several items regarding activities in Colorado as they relate to weather modification. Mr. Busto briefly reviewed the following, a) Colorado Water Conservation Board (CWCB) passed a resolution supporting S.517; b) received request from Congressman Udall for support for HR 2955 the companion bill to S.517; and, the CWCB adopted a resolution supporting both HR 2955 and S.517. Mr. Busto also reviewed wintertime operations carried out in Colorado during 2004-2005 and planned for 2005-2006.

North Dakota – Darin Langerud distributed a summary report of the 2005 North Dakota Cloud Modification Program which was completed August 31, 2005. Eight aircraft were used on the project covering 6.6 million acres. Radar field offices are located in Bowman and Stanley, ND. The radars are five-centimeter WSR-74C equipped with TITAN and AirLink.

A wet spring caused suspension of rain enhancement operations for the month of June and early July. Rain enhancement operations resumed for much of July, but were suspended when harvest began in early August. The 2005 NDCMP saw 593.02 flight hours logged and approximately 2,235 Kg of pelletized dry ice released by the top-seeding aircraft, and a total of 163.37 Kg of silver iodide dispensed by all aircraft.

The North Dakota Atmospheric Resource Board (NDARB) and its subcontractors began to finalize WDMP research initiatives this summer and analysis will commence this month with final reporting due by the end of the year.

California – John Andrew distributed a map depicting the 13 active projects in the state for the 2004-2005 season. The projects cover about 13,000 square miles.

Mr. Andrew noted the California Energy Commission is looking into funding some research on effectiveness of weather modification programs.

Mr. Andrew also distributed copies of a chapter from the California Water Plan Update regarding precipitation enhancement. He asked that if anyone had any comment regarding the updated plan to please send it to him within the next week.

Nevada – Arlen Huggins distributed copies of a summary report on the Nevada activities in weather modification. Mr. Huggins stated the operational program ran from October 19, 2004 to May 11, 2005. There was less ground seeding compared to the average over the past 10 years due to suspension for abnormally high snowpack. There were only 11 seeding flights for the Tahoe target and five for the Walker-Carson area. He noted snowpacks ended the winter above normal in all target areas, with water conditions generally improved, but still showing effects of a 5-year drought.

Mr. Huggins noted the Nevada Governor's office has expressed interest in Colorado River Basin cloud seeding. He also stated the Nevada State Cloud Seeding Program has been put into the base budget of the University (DRI) by the State Finance Committee for the FY06-07 biennium. This will be the first dedicated funding since 1982-83. Funding for the past 21 years has come from single requests to the Interim Finance Committee. This greatly improves the ability to plan winter activities. A new activity for 2006 will be building a prototype

propane dispensing system for the Tahoe area which will greatly expand the number of seeding hours in the Tahoe Basin.

CONGRESSIONAL ACTIVITIES

Discussion was held on activities related to S.517. It was noted that Josh McClintock is not getting much response from NOAA regarding S.517 and the possibility it entails. Dr. Golden feels each state should be contacting NOAA to let them know the states are keenly interested in the introduced bills and having NOAA administer this program.

Concern was expressed by members that the work being done by the member states in the areas of weather modification research may not be part of a larger national program with emphasis on hurricane amelioration.

Darin Langerud distributed copies of a resolution adopted by the North Dakota Atmospheric Resource Board in support of S.517 and HR 2995.

Chairman Huggins reiterated that members should be making contacts supporting S.517 and HR 2995. Mr. Huggins asked council members to keep him informed regarding the contacts made.

Chairman Huggins asked members to review the document distributed to congressional delegations and update the information for their programs as necessary. Darin Langerud volunteered to assist Mr. Huggins in editing the document.

WEATHER MODIFICATION RESEARCH

Chairman Huggins reported on a study being completed at this time by Dr. Bernie Silverman. It is a study of target-control based on annual stream flow. A single control basin was used. The basin used as control is the only intentionally unseeded basin with a consistent stream flow. Dr. Silverman shows some pretty positive results in terms of nearly every program. However, based on criticism, further study is recommended.

OTHER BUSINESS

Chairman Huggins asked members to send comments regarding the California Water Plan Update directly to him via email. Mr. Huggins will begin to draft a letter of support from the Council regarding the plan. The report is due to be finalized within the next week.

COMMITTEE ACTIVITIES

Chairman Huggins stated he feels the Bylaws of the Council should be reviewed. In that regard he appointed George Bomar to serve as Chairman of the Bylaws Committee and appoint other members he may need to assist.

Chairman Huggins appointed Darin Langerud and George Bomar as the Nominating Committee.

Chairman Huggins reappointed Tommy Shearer as Travel Committee Chairman.

INADVERTENT WEATHER MODIFICATION

Discussion was held regarding inadvertent weather modification. The apparent willingness of the scientific community to embrace the results of inadvertent weather modification far outweighs their willingness to embrace planned weather modification results. It may be to the advantage of Council members to use this acceptance of inadvertent weather modification to their benefit. It would seem anything learned in research of inadvertent weather modification should be able to be applied to planned weather modification.

It was general consensus that the Council keep referencing inadvertent weather modification in documents provided in Congressional activities, etc.

WEB SITE/OTHER

Darin Langerud asked members to send him ideas on items to be placed on the Council's web site.

Chairman Huggins requested LeNor Dollinger to look into printing envelopes for the Council.

The next meeting will be held in conjunction with the Weather Modification Association in San Antonio, Texas, April 19, 2006.

ARLEN HUGGINS, CHAIRMAN

Transcribed by LeNor Dollinger