

MINUTES - NORTH DAKOTA ATMOSPHERIC RESOURCE BOARD

NOVEMBER 1, 2010

Chairman Henry Bodmer called the meeting of the North Dakota Atmospheric Resource Board to order at 1:30 p.m., November 1, 2010 in the Lower Level Conference Room, State Office Building, Bismarck, ND.

ROLL CALL

Roll call was taken. Members present were Henry Bodmer, Bobb Brewer, John Bollingberg, Tom Tupa, Larry Taborsky, and Steven Weber.

Others present were Darin Langerud, Director; Mark Schneider, Chief Meteorologist; Kelli Schroeder, Business Manager; Dan Brothers, Meteorologist; Hans Ahlness, Weather Modification, Inc. (WMI); and Mike Dwyer, North Dakota Weather Modification Association.

MINUTES

IT WAS MOVED BY MR. BOLLINGBERG, SECONDED BY MR. BREWER, AND CARRIED ON A VOICE VOTE TO APPROVE THE MINUTES OF THE APRIL 8, 2010 MEETING AS DISTRIBUTED.

FINANCIAL UPDATES

Financial Status Report

Ms. Schroeder reviewed the financial status report for the period ending September 30, 2010. There were no further questions.

Budget for the 2011-13 Biennium

Mr. Langerud reported on the budget the Water Commission had already submitted for the 2011-13 biennium, as directed by the Governor. The Governor's request was to submit a 100% general fund budget with an optional 3% general fund cut to the existing budget.

Mr. Todd Sando arrived at 1:35 p.m.

With regard to the optional 3% cut from the Water Commission budget, Mr. Langerud indicated there were two programs involved. The cut totaled \$430,504. \$200,000 was taken care of by removing the pass-through funds to the Game & Fish for enforcement on Missouri River for sovereign lands. The remaining \$230,504 cut came from general funds that the Board uses to cost-share with the counties for the North Dakota Cloud Modification Project (NDCMP). In discussions with Mr. Sando & Dave Laschkewitsch (SWC Accountant), Mr. Langerud was assured that the Board will be reimbursed with special funds from the Resource Trust Fund so that the division budget is not affected if the cut is in fact taken.

Based on fund predictions for the last few months, budget is in good shape. The likelihood of the Governor asking for a 3% cut from agencies in the final budget is very low.

At the request of Mr. Bodmer, Mr. Langerud summarized his tentative plan for the budget for the 2011 NDCMP. The Board will be in the 2nd year of their contract with Weather Modification Inc. (WMI). WMI built in a 4% increase each year for aircraft lease and flight hours costs.

2010 NORTH DAKOTA CLOUD MODIFICATION PROJECT (NDCMP)

Cost Summary

Ms. Schroeder reviewed the cost report for the 2010 NDCMP. The majority of the cost overages this year related to the chemical bid. The acetone bid this year was approximately 20% higher than last year.

Mr. Langerud also noted that District II was under budget due to an airplane swap. The Cheyenne aircraft required a 100-hour inspection and maintenance. The aircraft had to go to Fargo for the maintenance and a Cessna 340 was substituted for the four days in which the Cheyenne was absent from project. In return, WMI charged the hybrid rate for that aircraft for 4 days instead of the cost for the Cheyenne.

Additionally, flight hour costs were also under budget. Because the districts were wet for a great portion of the project, most of the counties were under suspension for rain enhancement activities for the majority of the project. This led to greatly reduced flight hour usage.

Seeding agent usage / inventory

Mr. Schneider reviewed the ending chemical inventory for the 2010 NDCMP. The 2009 ending chemical inventory was provided for comparison. We have lower inventory of dry chemical. Ammonium iodide has a significantly shorter shelf life than other chemicals, so keeping excess is not cost-effective. We expect to have to purchase 200-300 bottles of silver iodide this spring.

Mr. Schneider noted the inventory of burn-in-place flares. We had a higher use of flares this year due to the unusually high incidents of severe weather. The higher use could also be due to the radar meteorologist's discretion in allowing pilots to use more flares. This issue will be addressed in Ground School by emphasizing to the staff that the flares are more beneficial at the beginning of seeding, as they will create more nuclei in warmer temperatures. But after that, seeding with generators is more cost effective.

Mr. Schneider also indicated that we had above-average use of ejectable flares as well. He also reviewed dry ice usage of 2010 as compared to previous years. Dry ice usage prior to 2007 is significantly higher which is attributable to more efficient use of dry ice and also a switch from ½ inch pellets to ¼ inch pellets in 2007. In previous years, both the Williston and Minot airplanes were equipped with dry ice hoppers. This year, only

the Williston Cheyenne airplane was equipped with a dry ice hopper. Its hopper size increased to 200-pound capacity.

Mr. Schneider also reviewed a comparison related to the time in minutes for takeoff to the beginning of seeding for our Williston aircraft. Until 2010, the aircraft was a Cessna 340. In 2010, the aircraft was a Piper Cheyenne. With the Cheyenne, the time to get to the storm to seed is nearly cut in half as compared to the Cessna 340. We are hopeful this trend will continue over time.

Mr. Langerud noted that the dispensation rate for the Cheyenne aircraft was increased from 10 pounds per hour to 12 pounds per hour due to the increased forward speed of the aircraft as compared to the previous aircraft.

Mr. Langerud noted that the Minot aircraft no longer contains a dry ice hopper but is still capable of top seeding with ejectable flares. He also reviewed the reasons for returning to one dedicated top-seeder and converting the other top-seeder to the hybrid configuration.

Generator performance

Mr. Schneider reviewed generator performance. In 2010, there was 1.8% failure. The 5-year average is 3.4% failure. The average failure rate for 1991-1998 was over 15%. In 1997, that rate dramatically decreased due to changes in the formula and the plumbing of the generators.

Intern Programs

Ms. Schroeder reviewed the intern program. There were 9 intern co-pilots and 3 intern meteorologists. Two of the interns were from Kenmare and another was from Williston.

There was a change in the way we rotated intern co-pilots through top-seeding aircraft. We used to rotate them through Williston or Minot, depending on their location. Since all would want experience with the Cheyenne, we decided to rotate them all through Williston this year. This causes the Seed 7 intern to be more like the roving intern, as they have little time at their home base.

Mr. Langerud noted that we have increased the hourly wage for interns to \$10 per hour in the 2011 budget. They were paid \$9 per hour this year.

Mr. Ahlness responded to questions relating to training intern co-pilots, hiring them in the future and the number of flight hours needed to be hired and insured by WMI.

Aircraft Operations

Mr. Langerud summarized flight log data. He also reviewed the contract clause, which requires aircraft to be operational. He noted that there were five incidents reviewed this year where aircraft were unable to launch due to various reasons. He reviewed those incidents and surrounding circumstances and recommended no penalties be applied to the final contract payment.

Mr. Ahlness explained in further detail what happened on each instance.

MR. TUPA MOVED TO APPROVE THE DIRECTOR'S RECOMMENDATION TO NOT APPLY ANY PENALTIES TO THE FINAL CONTRACT PAYMENT. MR. BOLLINGBERG SECONDED THE MOTION. MEMBERS MR. BREWER, MR. BOLLINGBERG, MR. TUPA, MR. SANDO, MR. TABORSKY AND MR. WEBER VOTED AYE. THERE WERE NO NAY VOTES. THE MOTION CARRIED.

Contractor's Final Report

Mr. Ahlness reviewed the contractor's Final Operations Report.

MR. BREWER MADE A MOTION TO ACCEPT THE FINAL OPERATIONS REPORT AND AUTHORIZE THE FINAL CONTRACT PAYMENT TO WEATHER MODIFICATION INC. MR. WEBER SECONDED THE MOTION. MEMBERS MR. BREWER, MR. BOLLINGBERG, MR. TUPA, MR. SANDO, MR. TABORSKY AND MR. WEBER VOTED AYE. THERE WERE NO NAY VOTES. MOTION CARRIED.

PREPARATION FOR 2011 NDCMP

Availability of housing

Mr. Schneider reviewed housing issues expected for 2011 in Stanley and Williston. ARB staff are already looking for housing possibilities for the five NDCMP personnel based in Stanley next season. We were fortunate this year that Badlands Power Fuels in Watford City provided our pilot crews with housing and they're planning to work with us again in 2011.

Update on Powder River Training Complex Military Operations Area expansion

Mr. Langerud updated the Board on the status of the proposed Air Force expansion of the Powder River Military Operations Area, which would affect District I flight and radar operations. He reviewed his comments made at the public meeting held in Bowman. Mr. Taborsky commented on issues brought to the Air Force's attention at other public meetings around the state.

At 3:15pm, Mr. Brewer excused himself from the meeting. A quorum remained.

RADAR OPERATIONS

Vaisala software bug resolution status

Mr. Langerud reviewed an issue with the IRIS software that plagued us all summer. Vaisala staff is still working on the issue. We were able to work around these problems for the most part this summer, but not without some headache. Vaisala has been able to replicate some of the issues we've been having in their lab but not all of them. The company has offered an extended one-year warranty on the system, which would begin after these issues have been resolved to the satisfaction of the Board and Vaisala. Mr. Langerud accepted this offer. We will be giving their staff direct access to our Bowman facility so that they can test some of the software fixes, which is especially important for

the issues they cannot replicate. We are hopeful this will be resolved over the next several weeks.

Year-round Bowman radar operations

Mr. Langerud mentioned that our Bowman radar would be transitioning from seasonal to year-round operation beginning in January 2011. There are six North Dakota, one Montana and one South Dakota counties participating in funding operations and maintenance for the radar during non-project months. This will approximately cost \$24,000 for the 8 months of operation. The majority of this cost is for having our technician on-call 24/7. The counties are participating in funding this because of a large coverage gap in the current National Weather Service radar network.

The National Severe Storms Laboratory is interested in incorporating our data into the National Mosaic and MultiSensor Quantitative Precipitation Estimation project. This would fill gaps in the network and incorporate the data into numerical models, which will help in forecasting precipitation and improve quantitative precipitation forecasting.

ARB will be holding \$20,000 in our budget for extraordinary maintenance.

ARB RESEARCH & EVALUATION PROGRAM

Polarimetric Cloud Analysis and Seeding Test 3 (POLCAST3)

Mr. Langerud reviewed the research experiment on hygroscopic seeding that has been ongoing every two years since 2006. At the spring 2010 meeting, the Board authorized a permit exemption for these activities as allowed in North Dakota Century Code.

Western U.S. cloud seeding operations and research

Mr. Langerud provided the Board with a map of weather modification programs in the western United States and reviewed some of those programs. Most of the states with operational programs are members of the North American Weather Modification Council (NAWMC), as are we.

2010 ARB COOPERATIVE OBSERVER NETWORK (ARBCON) REPORT

Growing season rainfall totals and grid maps

Mr. Brothers displayed copies of precipitation maps and reported on the efforts of the Board's Cooperative Observer Network. He noted that 758 members signed up this year and 681 actually reported data.

New graphing tool

Mr. Brothers demonstrated how to use the new graphing tool available on our website for the ARBCON data. He also demonstrated how to look up certain areas of the same precipitation data via Map Services, which is a map tool for all Water Commission data.

Snow reporting

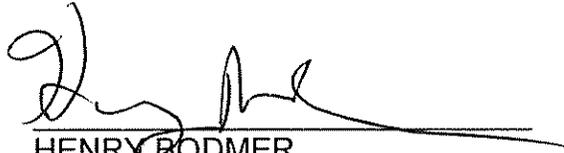
Mr. Brothers reported on the Board's efforts in having some rain gauge observers report year-round, including snowfall amounts. New 4-inch diameter plastic rain gauges were purchased, which are more suitable for winter reporting. We were hoping to get 200 volunteers for winter reporting. However the response was incredible with over 400 volunteers.

ELECTION OF OFFICERS

Mr. Bodmer called for nominations for offices.

MR. BOLLINGBERG MOTIONED TO LEAVE ALL OFFICES AS IS, CEASE NOMINATIONS AND CAST A UNANIMOUS BALLOT. MR. TUPA SECONDED THE MOTION. MR. BOLLINGBERG, MR. TUPA, MR. SANDO, MR. TABORSKY, AND MR. WEBER VOTED AYE. THERE WERE NO NAYES. MOTION CARRIED.

Being no further business the meeting adjourned at approximately 4:15 p.m.



HENRY BODMER
CHAIRMAN

Transcribed by Kelli Schroeder