

## MINUTES

### NORTH DAKOTA ATMOSPHERIC RESOURCE BOARD

November 8, 1999

The Atmospheric Resource Board was called to order by Chairman William Geiger at 9:00 a.m. CST, November 8, 1999, in the Lower Level Conference Room of the State Office Building, Bismarck, North Dakota. Board members present were Mary Cichos, Judith DeWitz, James Haaland, Hattie Melvin, W. Joseph Porten, Jay Sandstrom, and David Sprynczynatyk. Staff members present were Bruce Boe, Director; LeNor Dollinger, Business Manager; Darin Langerud, Chief Meteorologist; and Paul Moen Field/Research Meteorologist. Other present were Eldean Flynn, Sandra Flynn, Jim Sweeney, Hans Ahlness, Troy Seidel, Monte Hinger, and Mike Dwyer.

### APPROVAL OF AGENDA

Judy DeWitz moved to accept the agenda as presented. The motion was seconded by Joe Porten. Motion carried.

### ELECTION OF OFFICERS

Jay Sandstrom nominated Jim Haaland for Chairman. David Sprynczynatyk seconded. No other nominations were made. Jim Haaland was elected Chairman by unanimous vote.

Judy DeWitz nominated Jay Sandstrom for Vice Chairman. Hattie Melvin seconded. No other nominations were made. Jay Sandstrom was elected Vice Chairman by unanimous vote.

Judy DeWitz nominated Mary Cichos for Secretary. Hattie Melvin seconded. No other nominations were made. Mary Cichos was elected Secretary by unanimous vote.

### APPROVAL OF MINUTES

Joe Porten moved to approve the minutes of the April 5, 1999 telephone conference call as distributed. Seconded by Jay Sandstrom. Motion carried.

### FINANCIAL STATUS REPORT

Mr. Boe reviewed the financial status report through September 30, 1999. He noted that there has been a new cost center added this biennium, which is "information technology" (IT). Included in the IT cost center are TITAN lease costs. Other items to be funded from this cost center include personal computers, a new NLDN downlink, and miscellaneous other hardware/software. Mr. Sandstrom asked why IT is kept separate. Ms. Dollinger indicated that the new cost center was added pursuant to legislative directive to all agencies.

## **NORTH DAKOTA CLOUD MODIFICATION PROJECT**

### **Review of Contractor's Final Report**

Mr. Troy Seidel and Mr. Hans Ahlness reviewed Weather Modification, Incorporated (WMI) final report for the 1999 North Cloud Modification Project. Mr. Seidel mentioned to the board that a new tracking system for aircraft had been implemented on the Cessna 340 in Williston, and the base seeder in Stanley. The tracking devices provide aircraft positions in real-time, and thus allows the meteorologist to see where the planes are working the storm.

Mr. Ahlness summarized all the work that has been done by Mr. Seidel to improve the wing-tip ice nucleus generators in the last couple years. Mr. Ahlness noted to the board that WMI will take the generators to Colorado State University to have them tested for performance without the stall fences.

Mr. Sandstrom asked about the tracking system and who will be responsible for deploying it. Mr. Boe answered that ARB will want to include it in the next bid. Mr. Sandstrom inquired if the tracking system will aid in the seeding techniques, or if is it more a safety issue. Mr. Moen said that safety is a big factor because most of the pilots on the project are not very familiar with seeding. It is also a way for the meteorologist to check up on the pilots and make sure they are seeding the right cell, he added.

### **Seeding Agent Use**

Mr. Langerud informed the board that this was a relatively normal year for the use of chemicals and flight hours. District One was quite a bit under budget for flight hours, because of the change in size of the district.

Mr. Langerud commented that the wing-tip generators have been more reliable in the last couple years. The pilots feel more confident that they can turn them on and off between storm cells. That has done two things: it lengthens the on-station time and results in more of it being used in actual seeding. This also increases the flight hours used because pilots are not having to land to fill the generators as often. The flow rate of the generators last year was 4.09 gallons per hour. This year, with the improved flow, average burn time was 2.97 gallons per hour, very close to the 3 gallons per hour specified in the bid.

### **Preliminary Project Cost Report**

Ms. Dollinger distributed a preliminary cost report for the project, and mentioned that it shows all the bills paid to date, and the contractor payments.

### **Contractor Performance**

Mr. Boe reviewed aircraft performance and generator performance. There were two days in which WMI aircraft were down and missions missed. One of them was when the PIC of Seed 8 (Kenmare) simply left and was not around. Radar could not contact of him because he went to Grand Forks on his own volition. He was summarily dismissed and replaced by WMI. The other missed mission occurred when Seed 4 (Stanley) was unable to fly due to a clogged fuel injector. The PIC was aware of the situation and had done nothing to fix it. The applicable penalty, according to the service contract, is \$529.40 per day. Thus, a potential penalty of \$1,058.80 could be levied, at the discretion of the board.

Mr. Boe continued, noting that this year, the wing-tip generators were operational 97.5% of the time. No penalty applies unless performance drops below 90%.

Mr. Geiger pointed out that someone not showing up for the job is not a mechanical problem.

Mr. Sandstrom said that it is, "not mechanical, it is failure to fly, period."

Mr. Haaland noted that the contractor took measures immediately to correct the problem.

Ms. Dollinger informed the board that the final contract payment is \$45,532.00.

Mr. Porten observed that when the board fined the contractor for the generator failure problem, that was fixed, and even if this very small, the point must get across.

The motion was made by William Geiger to authorize final payment to the contractor for the 1999 North Dakota Cloud Modification Project without penalties in the amount of \$45,532.00. Seconded by Mary Cichos. Members William Geiger, Mary Cichos, and Hattie Melvin voted aye. Members Judy DeWitz, Joe Porten, and Jay Sandstrom voted nay. Chairman Haaland voted aye, which broke the tie, and the motion carried.

### **Suggested Project Improvements**

Mr. Boe reported that at project end ARB staff and WMI staff sat down and discussed some possible improvements. This related mostly to better training of personnel, (meteorologists and pilots), and how we might improve ground school.

Ms. Dollinger stated that from the district visits she learned that many felt that the meteorologist section of ground school was a little short. Other suggestions were that ARB staff should visit the second semester weather modification class at UND at the end of the year, and tell more about the project. This could include more information about what goes on during the project. The second semester weather modification class really needs to spend more time on project details. The ARB staff has learned that the class has not been exposed to the paperwork.

### **Scope of 2000 Project**

Mr. Boe noted that the board lacks the resources to repeat the 1999 project, as sufficient cost-sharing is not available to keep District I operating by itself. For now Slope County is out of the program. The last legislative session amended our law, so that portions of a county are now eligible to participate in the weather modification project, it does not have to be the whole county. This could be accomplished two ways: the whole county could vote on part of the county taxing themselves for the program, or a private group could organize a project. The staff knows there is strong interest remaining in the eastern part of Slope county, and also interest in areas farther east in Hettinger county. Mr. Porten asked if it would be possible to have Bowman county run with District II counties, it all being one district. Mr. Boe answered that it would be very difficult, for numerous reasons. Mr. Sandstrom wanted to know if there is an organized effort to go out and try to get Slope county back. Mr. Porten replied that Bowman County residents who were interested in the program were voluntarily assessed a \$.20 per acre. Ms. DeWitz asked what sells the program in District II, and Mr. Haaland responded that they know the program works.

### **ADMINISTRATION ISSUES**

Ms. Dollinger stated that the Water Commission personnel policy manual has been completed. Job descriptions for all the 80 employees of the Water Commission have been completed, which is a requirement of the Americans with Disabilities Act.

ARB electronic records management efforts almost are completed. The state has put together an electronic records management group, which has now developed a set of guidelines for managing records of the state that reside on electronic media.

Ms. Dollinger has done some supervisor training for the Water Development Division of the Water Commission. She also attended a two-day technical seminar of the Equal Employment Opportunity Commission regarding employer responsibility in the area of discrimination, etc.

She also reported that she had attended a hearing of the budget section of Legislative Council regarding the grant pre-approval process study, that is ongoing as a result of house concurrent resolution 4050. Other personnel-related work will include the safety policy of the Water Commission, and supervisor training regarding their return-to-work policy.

Ms. Dollinger reported that Ms. Feist has put together a historical document which summarizes board actions. Ms. Feist has also compiled a list of all past board members and staff..

### **1999 GROWING SEASON PRECIPITATION: ARB STATEWIDE RAINFALL MAPPING**

Mr. Langerud distributed maps of the May - September rainfall amounts as reported by the rain

gauge network. April was not included because of snow.

### **ARB FACILITY Y2K PREPAREDNESS**

Mr. Boe informed the board that the Y2K preparedness for ARB falls into two areas, the office and the field. The radars themselves are older technology, and do not have Y2K issues. The TITAN computers are the responsibility of the contractor. In the office, ARB has recently acquired a couple of new personal computers which are fully Y2K compliant. The Hewlett-Packard workstation used to support the NDCMP is Y2K compliant from the hardware side, but a patch remains to be downloaded to ensure compliance of software.

### **TITAN DATA ANALYSIS**

Mr. Moen and Mr. Langerud presented a visual demonstration of TITAN radar software and aircraft tracking. Mr. Boe informed the board that what was presented was visually almost the same as what is seen in real-time in the radar. TITAN receives raw radar information from the radar data acquisition system (RDAS) and then processes it on a LINUX-based workstation. With the flight tracking system the meteorologists are able to "see" the planes on TITAN radar display.

Mr. Boe asked Mr. Moen how TITAN helps him with post-analysis of storms, and perhaps equally important, about showing the flight crew how the storm looked from the radar perspective. Mr. Moen replied that if the pilots are on their way back to their base, they will stop in Stanley to look at the radar and discuss the storm. When the radar is talking to them on the radio they may not understand something, and that way they can be shown what transpired so they will be better prepared next time.

Mr. Boe informed the board that the images are ported to the Internet in real-time every 15 minutes from both radars all summer long. The Weather Service used the images quite a bit to look at areas their radars do not cover, he added.

Mr. Moen and Mr. Langerud noted that they have embarked on a computer analysis, to take a first look at what some of the TITAN data maybe telling us, in terms of how storms have responded to treatment. TITAN is able to export data into a spreadsheet form. The storm strength, height, and where storms are moving are things Mr. Moen has been studying. Mr. Moen is writing a program that will select storms that have been logically seeded, based on specific criteria. This will be done for storms inside and outside the district, in equal areas.

### **RESEARCH UPDATE**

This last summer, Mr. Langerud and Forecaster Bryan Davis began working on a simple cloud seeding model which examined the release of dry ice pellets at a certain temperatures and heights. This will allow comparison of how much of it is used in the target cloud volume, based

on the formula and equations. Mr. Langerud is hopeful that we will be able to use the dry ice more efficiently.

Mr. Boe reminded the board that we are not presently involved with any federal agencies in weather modification research. The staff has been working to restore such funding. Last summer there was a proposal sent to the National Science Foundation to obtain funding to for analysis of radar and rain gauge data. The collaborative proposal was rejected based on cost and other considerations, but staff is in the process of revising the proposal.

Mr. Langerud mentioned to the board his recent research involvement with the University of Iowa. Mr. Langerud met with a professor that is working on research in radar ground truthing and precipitation analysis. The University of Iowa has submitted a proposal to NOAA.

### **SPECIAL EDITION OF NORTH DAKOTA WATER MAGAZINE**

Mr. Mike Dwyer explained to the board that a special edition of the Water Magazine on weather modification is planned for October 2000. This is done in conjunction with efforts to obtain a favorable vote in Williams county. Mr. Dwyer put together an outline that shows what the Weather Modification Association thinks is necessary to have a favorable outcome. They will put together an insert in the Shopper, which will go out twice, and then will be followed by the Water Magazine. There will be two direct mailings to about 9,000 persons that have voted in Williams county the past couple of elections. There also will be some door-to-door campaigning in Williams county, in which they will be targeting the areas where people have voted. Mr. Dwyer is trying to raise funds for the special edition of the Water Magazine.

Renewal dates for the counties weather modification authorities are as follows: Bowman is June 6, 2000; McKenzie is March 10, 2000; Ward is March 9, 2000.

### **PROGRAM INFORMATION DISSEMINATION EFFORTS**

Mr. Boe touched on a few things the staff has been working on to inform the public about the program. Mr. Langerud mentioned that during the summer every week an operations summary is faxed to the newspapers in the participating counties. There is also some video of North Dakota storms to be included in two upcoming episodes of "Storm Warning," which is a production that airs on the Discovery Channel.

### **OTHER BUSINESS**

Mr. Eldean Flynn said that he would like to see the Montana buffer zone used again. Mr. Boe replied that he spoke to Rich Moy of the Montana Department of Natural Resources and Conservation and asked him if an environmental assessment would serve instead of a full environmental impact statement (EIS). Mr. Moy said Montana law states that they must have an EIS.

Mr. Hininger pointed out that in his opinion, the Montana buffer zone is very critical to Williams county. He asked where the "Montana buffer zone" lies on the priority list of the board.

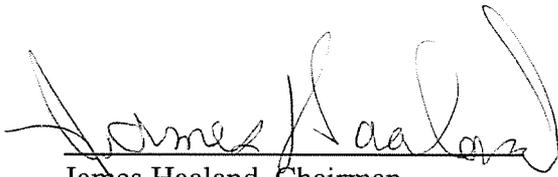
Mr. Haaland stated that he feels this is something that the board needs to work on, especially finding the funds to get this done.

Mr. Boe noted that the ARB has several times requested the money to fund an EIS in the budget, but the request has not been funded

Mr. Haaland suggest that the board work toward security funding to get this done.

Mr. Sandstrom asked if there is any way that an existing environmental study or a statement similar to seeding that is done in North Dakota could be used in lieu of a new study, adding that if the board had the money, it would no be a problem to make the Montana buffer zone the number one priority. Mr. Dwyer feels the board should come up with a strategic plan before moving forward.

There being no further business before the board, the meeting was a adjourned at 1:10pm.



James Haaland, Chairman

Date \_\_\_\_\_

\_\_\_\_\_  
Mary Cichos, Secretary

Transcribed by Dawn Feist

