

Chairman Thomas and members of the committee I would like to thank you for being given the opportunity to testify in support of HB 1166 today.

My name is Roger Neshem and I farm with my wife ~~and~~ near Berthold as we raise our two young daughters. I helped lead the fight to end the longest continuously operated hail suppression program in the world that existed in Ward County. Our grassroots campaign won with a 9-1 margin in a 2020 vote.

Prior to the termination of the weather modification program in Ward County I had been appointed to the county weather modification authority. I tried to implement changes there such as suspending hail suppression operations during times of drought, spending more time seeding for rain enhancement (80-90% of seeding operations are hail suppression typically no matter how bad of a drought we are in), passing by laws and asking questions about results and how operations and decisions are conducted. We would fill buildings for meetings that use to take up a single small table at a restaurant. In 2017 after listening to concerns of area farmers the Ward County Commission voted 5-0 to suspend all operations until the drought was over, but the seeding continued to take place because the county commission had no power over the weather authority board, and they ignored the vote and kept on seeding. Our weather authority board chairman broke open meeting laws, lied to our county commission about having by laws and took zero input from constituents who asked for changes. This proved to everyone these weather authority boards have too much power and no accountability.

My experience with the Atmospheric Resource Board has been much of the same. No one ever addresses questions about, abusing buffer zones, excess flights, doing hail suppression while in a

D4 drought or seeding out of the project area. When I asked ARB Chairman Tom Tupa about flights seeding eastbound storms in McHenry county, his response was the pilots are not able to see road signs to know where they are, so they sometimes seed outside of project area. I requested a detailed budget of the ARB in June of 2018 from both Chairman Tupa and Director Langerud. To this day I have received nothing. The ARB modus operandi is to tell you to talk to local authorities who in turn tell you to talk to the ARB and round and round you go getting nowhere.

Finally, there is the ND weather Modification Association of which I was a member of as a result of me holding my position on the ward county weather authority board. I however was blacklisted and never received the communications all other members on all the other boards received. I was frozen out. This association gets its members from the participating counties weather boards who take money from their mill levy that is to only be used for "weather modification activities" as stated in the statute, they then donate it to the NDWMA which in turn lobbies for more funding for the program. The NDWMA is represented by Clearwater Communications, co-owned by Senator Mike Dwyer, head of ND Water Users, and editor of ND Water magazine. To be clear, you have a senator who votes to fund the program, then in turn charges taxpayers to lobby for the program, thru his communications firm, which he then charges the NDWMA, his own client, for a sponsored article, highlighting the program, in each issue of the state funded ND Water magazine where he also holds sole editorial discretion. This is the way the program gets around using "taxpayer" money to lobby for the program itself. They launder it thru the NDWMA and then send that money right back to the state after Mike Dwyers firm takes

its cut. Taxpayers deserve much better than to be abused in such a fraudulent way and an ethics investigation is badly needed.

These are some of the bureaucratic issues with the program that makes HB1166 such a necessity. The program was intended to be open and take input from farmers about needs. The arrogance and lack of accountability with which weather boards and the ARB conduct themselves is wrong and they do not hold to the values the original program was intended to have.

Proponents of the program talk about how cheap it is and its high returns. The latest review of the program shows that it costs 40 cents per planted acre and in return it adds \$3.00 for hail suppression, \$9.19 per acre for a 5% rainfall increase and \$18.15 for a 10% rainfall increase. Over 40% of crop losses in the state are due to drought while less than 12% are due to hail and the numbers show rain enhancement is far more valuable to the state. Inexplicably weather authorities choose hail suppression 80-90% of the time over rain enhancement. 2016 marked the end of Kansas's hail suppression program after 12 of its 14 program members voted it out or had it terminated by county commissions. Today there are only 4 counties left conducting hail suppression in the US. All 4 of those counties are in drought plagued ND. It is worth noting that no county has ever returned to the hail suppression program after it has left in ND.

→ We must remember all of this started based on rain enhancement + that it could increase rain 20-30%.

A new study was published in the Atmospheric Research Journal in 2022 attempting to measure the effect of hail suppression on rainfall. It compared precipitation rates from pre weather modification in the state to the 42-year modified period from 1977-2018. The paper showed a small precipitation increase in McKenzie County when compared to 3 control areas to its west and no change with another control area to its NW.

Bowman county showed no change in precipitation on average but did show a 5% precipitation loss compared to one of the control groups.

When the study looked at Ward County, they found a 3% decrease in precipitation when compared with its control group. This echoes the same results the Wise study showed in 2005. I put numbers to this precipitation decrease to quantify it in the exact same terms and methodology employed by the ARB.

According to ARB literature hail suppression adds \$3.00 per acre to farmers pockets. A 5% increase in rainfall adds another \$9.19 per acre and a 10% increase in rainfall adds \$18.15 per acre. When subtracting out the cost of 40 cents per acre you get total returns of \$11.79 to \$20.75 per acre. However, if the program causes a decrease in precipitation of 3% as both the Wise and latest study shows you have a net loss of \$2.92 per acre for Ward County. The math is as follows:

$\frac{3}{5}$ is equal to 60% of \$9.19 per acre. This gives us a negative \$5.51 per acre in lost rainfall.

We will assume that hail suppression did occur even though there is zero scientifically credible evidence hail can be suppressed so that adds back another \$3.00 per acre.

Finally, we subtract the cost of 40 cents per acre to give us a net negative return per acre in Ward County of \$2.91.

We can take the \$2.91 per acre times the acres of farmland in Ward County which as of 2020 was pegged at 1,153,475 acres. This gives us a cost per year to Ward County farmers of \$3,356,612 dollars. IF we want to take the analysis further over the last 42 years the program has cost ward

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county farmers over \$141 million dollars. The numbers all double if hail is not suppressed to the degree which is claimed.

Ward County sits on the far eastern end of over 140 miles of cloud seeding. No storm system can hit ward county from the west or southwest without being seeded even though we overwhelmingly voted out of the program. The seeding buffer zone still extends into Ward County 6 miles where planes still seed.

The current weather modification program is unworkable due to conflicting needs of farmers, unaccountable weather authorities and its negative economic impact. The program brings useless conflict to areas it operates in. We non seeding counties deserve to have say over what goes on in neighboring counties that affect our way of life as men and women of agriculture. There are no fences or walls to contain weather modification. The effects travel far outside permitted counties. No one with the power to alter seeding programs will change them so we must thru a statute that gives surrounding counties the ability to protect their interests and rights against these all powerful weather authorities. House Bill 1166 gives us that ability we desperately need. The time has come for the super majority of counties who do not want weather modification to be allowed to protect their skies from weather modification. Please vote yes on House Bill 1166