

Dear Planning Commissioners and Board of Supervisors,

I'd like to start by introducing myself. My name is CB and I grew up and lived in Bedford County most of my life until I went away for college. My family has owned land and farmed in the county for almost 100 years and I am now a farm owner in District 7. I am not an environmental activist but I do hold a PhD in Microbiology and Immunology. I should disclose that I currently work for the pharmaceutical industry and the main product my company produces is swine derived. Thus, I have a firm understanding of the need for industry but I also firmly believe there should be a balance of risk and benefit.

I am contacting you in regards to the upcoming meeting on June 9<sup>th</sup> to vote on the Amendment to Section 30-81-2(B)(1) of the Bedford County Zoning Ordinance being general standards for Commercial Feedlots (Confined Animal Feeding Operations). As a farmer and a trained scientist, the proposed changes deeply concern me. I understand the need for growth and change; however, I don't think we should compromise our environment or public health to accommodate it. CAFO are currently welcome in our county under the existing regulations, which in my opinion are much safer than what is proposed in the amendment.

You have proposed these changes as standard zoning changes. However, reducing the required distance these facilities will reside from our homes, schools, roads, water sources etc. by ~80% or more is not a minor change. Many citizens may plead with you because of the odor, unsightly facilities or nuisances associated with the transport of these animals. While these are all valid reasons, my plea is strictly based on scientific evidence that these facilities propose hazardous risks to our environment and community. Thus, reducing the regulations currently in place to protect our community does not seem like a fair risk. I imagine these zoning changes will make our community more attractive for industrial farming. Where would you expect these facilities to be located in our county; miles down a side road or just off our major highways and byways where they are more accessible? What is the probability that making our community more accessible to industrial farming will lead to a processing facility also becoming a part of our community? The fact that this proposed change has occurred just as China lifts the 7-year ban on Va poultry imports does not seem like a coincidence to me. I'd like to know who is driving these amendments; is it industry or our state government? These are questions I think we as a community need to consider when debating these zoning changes.

CAFOs are known to be an environmental hazard because of the large amounts of animal waste produced that increase risk to air and water quality and aquatic ecosystems. According to the EPA, states with high concentrations of CAFO experience on average 20 to 30 serious water quality problems per year as a result of manure management issues. The most common toxins found include nitrate and ammonium, but various phosphates, antibiotics, arsenic, and estrogen hormones are also present. I'd like to remind you that a CAFO is responsible for one of the biggest environmental spills in U.S. history. In 1995, a 120,000-

square-foot (11,000 m<sup>2</sup>) lagoon ruptured in North Carolina, releasing 25.8 million US gallons (98,000 m<sup>3</sup>) of effluvia into the New River. The spill resulted in the death of 10 million fish in local water bodies. The spill also contributed to an outbreak of *Pfiesteria piscicida*, which caused health problems for humans in the area including skin irritations and short term cognitive problems (neurotoxicity). I realize this is an extreme example of the negative impact a CAFO can have, but the risk is clearly there.

This recent publication by the EPA reports on a survey of 7 CAFO sites that were monitored for a number of years for water pollution <http://nepis.epa.gov/Adobe/PDF/P100F9DI.pdf>. I don't anticipate that you have the time to read this entire 236 page document, but if you would like a more inclusive overview of this document, I recommend reading pages 11-12 which contain the executive summary. In short, these data show that ground water contamination by nitrate, ammonium or estrogens, particularly estrone, can occur at very different types of CAFO, whether through leaking lagoons, leaking pipes or infrastructure, land application of wastes in excess of agronomic needs, or other factors. Estrogens have slow degradation rates, tend to bioaccumulate in the food chain and have long half lives in humans. Although estrogen levels in some sites are dropping, it may be several years before 17 $\beta$ -estradiol and estrone drop below the PNECs of 1.0 ng/L and 3-5 ng/L, respectively, as established by [http://www.salmon-trout.org/pdf/EA.%20\(2004\).%20Proposed%20predicted%20no-effect%20concentration%20\(PNECs\).pdf](http://www.salmon-trout.org/pdf/EA.%20(2004).%20Proposed%20predicted%20no-effect%20concentration%20(PNECs).pdf). I leave you with this question: do you ever wonder why your female children or grandchildren reach puberty earlier than previous generations? There is scientific evidence that suggests the hormones in our food and in our environment are a contributing factor. ([http://pediatrics.aappublications.org/content/121/Supplement\\_3/S167.short](http://pediatrics.aappublications.org/content/121/Supplement_3/S167.short)) (<http://www.ncbi.nlm.nih.gov/pubmed/23367522>) Furthermore, animal studies show minute concentrations are capable of eliciting these effects.

There are also studies showing the effect of CAFO emissions on local air quality and the increased risk of asthma, particularly in children. (<https://www.extension.purdue.edu/extmedia/ID/cafo/ID-358-W.pdf>). Due to the small number of these studies and conflicting data, it is difficult to draw a conclusion on the impact CAFO may have on respiratory illnesses in neighboring areas. However, it is certain that CAFO emissions can have a detrimental effect on the respiratory health of those that work inside the facilities, and these effects are mediated by the same toxins that pose a risk to our water supplies.

Other considerations to keep in mind include the fact that the samples from these sites are often only taken annually, thus toxin levels could be higher or lower depending on timing. There are also variations of monitoring by the EPA based on the size of the CAFO, which is determined by animal type and number. I found it shocking that "small" CAFO are only monitored on a case by case basis. A facility housing less than 37,500 chickens is considered

small. Does that seem like an insignificant number that should be excluded from monitoring? What I find most disturbing is that this contamination can continue to occur years after the lagoon in no longer is use. In the case report above, toxins were detected 2 years after one of the CAFO sites was closed down. The EPA is also constantly revising these regulations, which is concerning since some have been reversed after observing the adverse effect or ineffectiveness of the policy. Without more consistent and stringent monitoring and regulation, I feel safer being more conservative with our zoning policies.

Although estimates vary, 40% to 87% of all antibiotics produced in the U.S. are used in animal feeds to promote growth (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817683/> ). One complication is that antibiotic degradation products may be almost as potent as the parent compounds, and yet may be more mobile in soil (<http://www.ncbi.nlm.nih.gov/pubmed/12966963> ). This hasn't been studied to the extent that would really allow us to understand how the bi-products of what these animals are fed impact human health. However, there are numerous reports of workers from these facilities developing antibiotic resistance and allergies to most of our current antibiotics. What will happen when we stop responding to the current antibiotics for the treatment of common illnesses? I work in the pharmaceutical industry and I can tell you that development of new antibiotics is not a priority, and thus our options are limited.

The Peaks of Otter and Smith Mountain Lake are two of the most beautiful attractions for our county, and tourism provides revenue to our local businesses. Due to the increased value of lake front homes, the tax revenue from the homes located on the lake are important to our local government revenue. The presence of CAFO also has negative impacts on property values. I found this resource (<http://www.factoryfarmtaxprotest.org/ExamplesofPropertiesDevaluedbyFactoryFarms.pdf>) to be an excellent example and compilation of references referring to the impact of the presence of CAFO on property values. In 2007 the Institute of Science, Technology and Public Policy reported that proximity to a CAFO can reduce the value of a home by 40%. In 2013, the National Association of Realtors published "A Field Guide on the Impacts of Animal Feedlots on Property Values." University of Northern Iowa published "An Analysis of the Impact of Swine CAFOs on the Value of Nearby Houses" reporting large adverse impacts suffered by houses that are within 3 miles and directly downwind from a CAFO are found. This should be a concern for any property owner in the county considering these amendments would allow a facility within 250 feet of a common property line.

I'd like to end by asking you what you perceive the positive attributes of these zoning changes to be? How do you foresee these proposed changes making our community more user friendly for these industry farms? CAFO are welcome to set up camp in our county now, they just have to make a little extra effort to do it. Why should we risk our beautiful environment to

make it easier for them? CAFO produce similar amounts of toxins as chemical and pharmaceutical facilities do but they don't supply jobs to our community. Most of these facilities employ only a handful of people and offer low paying wages. I'd like to ask you what perceived benefits to our community are worth risking our environmental safety, our land values, our health and our tourism. I have to assume there is some tax or revenue benefit to having these facilities in our county. Regardless, if these facilities decrease land values and ultimately the tax revenue, how do you see this as beneficial? How much money would the county lose if Smith Mountain Lake had to close due to pollution, or if our beautiful mountain streams were impacted? What impact would this have on our revenue from tourism? Who is responsible for cleaning up a mishap? It is my understanding that taxpayers pay for CAFO clean up through assistance from the Environmental Quality Incentives Program. Currently Representative Saunders from Indiana has proposed legislation for CAFOs to set aside funds to pay for cleanup in case of environmental spills. Is this because he has witnessed firsthand who actually pays for these mishaps? Who pays for the costs of updating these facilities when regulations change?

I want to thank you for taking the time to read my letter and I hope you will consider the true and full impact these facilities could have on our community when considering these zoning changes. I am not against farming or industry as long as it occurs responsibly. If you have any questions or you would like to discuss this further please feel free to contact me.

Kind Regards,

CB