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## **ODOR FOOTPRINTS?**

Saline County officials have been getting a lot of input on transitional zoning versus general agricultural zoning. There has been a great need to update the 30 year old County comprehensive plan and zoning ordinance in Saline County. The local County Planning and Zoning Commission has been working hard on the process for two years. County Commissioners feel responsible for consistency across all towns and villages in the County when it comes to zoning rules and regulations.

There's no doubt about it, odors from livestock operations can stink. But what is reasonable for any specific agricultural area in our County? Local town officials have an obligation to do what is best for folks who live in town when it comes to future planning and County Officials have an obligation for what is best for folks in the County. Research shows odors are not uniformly distributed, and University of Nebraska-Lincoln engineers have and continue to develop tools that will help producers and communities better plan for them.

Livestock enterprises have changed because of the sheer numbers of animals it takes to make a living these days, plus vertical integration of certain animal industries. This has made zoning a more complex issue. A great example of this is to travel east of Firth on Gage County Road and see quarter million dollar homes on acreages in a farming area with five modern poultry barns housing 790,000 layers, all adding greatly to the school district's tax valuations. In Saline County, we have an excellent example of a larger cattle feedyard where quite a few of our smaller, local cow-calf operations will conduct a lot of business. Agriculture has changed compared to what it used to be years ago.

The University of Nebraska is using research into odor emission and dispersion to develop resources that assess where livestock odors will cause the most problems, which can help create buffer zones of varying sizes and shapes around livestock operations. The goal of the research is to make available resources that help communities better assess those situations at the local level.

In Saline County, Zoning Board members have discussed confined feeding and open lot setback distances plus whether to use a 96 percent odor annoyance free condition zoned area. If there are any residences impacted within the 96 percent area, the permit would be denied. The setbacks currently being proposed by the Planning Board in the new zoning ordinance in the general ag zoning district are very close to the 96 percent guideline or exactly the same. Small livestock expansions, Class I and II, are permitted if setbacks are met. Any large livestock expansions, Class III, IV and V, must go before the Zoning and Planning Board with a public hearing and then on to the County Commissioners with another public hearing.

The odor impact tool's resources will help livestock producers plan new or expanded livestock facilities to reduce odor impact and help County Zoning Officials evaluate proposed construction of livestock facilities across Nebraska. All in all, these tools will give sound, scientific information for communities when it comes to applying County zoning laws and assessing the expected impact on neighbors downwind of the sources of the smells. The alternative is pulling a



number out of mid air or trying to copy rules made by someone else. Current research data is more valid for confined swine units but not valid for open lot feedyards for cattle at this time.

Odor impact also depends on what type of day it is. Whether it's windy, blustery, humid or sunny, it all has an effect on odor. The calmer and more stable it is, the more odors will remain concentrated near the ground and become an annoyance for more distant neighbors. Hot, humid days and calm nights generally produce the worst odor conditions. When it is windy, it's like a mixing bowl and the odors are diluted.

Researchers in Nebraska have done "odor sniffer" training and on-site searching for where odor was moving, called "plume chasing." They take standardized readings at different distances from the site. The measurements they take with their noses are being compared to the model's projections. UNL is in the process to train neighbors of livestock operations to take readings, and should have data needed to validate the process.

The odor footprint guidelines are a tool, not a guarantee. It helps with guidelines, and would continue to be calibrated with various applications. UNL researchers indicate the tool was designed to be a guideline for local officials but not necessarily used in zoning law.

For more information on county zoning proposed rules and regulations and issues related to livestock zoning, go to: [www.saline.unl.edu](http://www.saline.unl.edu) and look under "Local News."

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