

December 31, 2020

Mr. Gary Swanson, Chairman
Cherry County Planning Commission

C/O Eric Scott, Esq. via Email: eric@ericscottlaw.com
Cherry County Attorney
P.O. Box 349
Valentine, NE 69201

RE: Application filed by Len Danielski and Danielski Harvesting & Farming, LLC (“Applicant”) for Conditional Use Permit 001-20 (“CUP”)

Dear Mr. Swanson and members of the Planning Commission:

As you are aware from our previous correspondence on this matter, McGrath North represents Ed Brown who, along with his family, owns Amorak, Inc. d/b/a Two Rivers Ranch in Cherry County. Mr. Brown sent a letter on July 26, 2020 and McGrath North sent letters on July 28, 2020 and on November 11, 2020 detailing various concerns regarding the CUP, most of which remain unresolved. We remain strongly opposed to the proposed facility and operation. Without belaboring or waiving the points raised in our previous letters and testimony by us and many others at the previous Planning Commission meetings, we are taking this opportunity to add emphasis on a couple of issues.

ODOR IS A HUGE ISSUE.

Section 501.05(15)(D) of the zoning regulations makes the fact that odor is a major issue very clear particularly when exceeding 2000 Animal Unit threshold, and it has been made very clear by the personal testimony by members of the public at the meetings as well as the large number of citizens who have signed petitions in opposition to the proposed swine operation. The County’s zoning regulations require the applicant provide assurances that “such larger numbers of animals **WILL NOT** [emphasis added] result in more properties being subjected to unreasonable levels of odor for unreasonable duration periods.” The Applicant continues to fail to do this and has taken to talking about the Nebraska Odor Footprint Tool (NOFT) in an effort to allay concerns.

Anecdotal experience relayed by people who have testified at the meetings and from the fact finding visits to some swine facilities by two members of this commission, not to mention studies we have cited in previous letters, demonstrate that it is at best a mixed bag on whether a particular swine facility will create odor problems in the community. This makes it abundantly clear that we need far more than vague assurances from an applicant that odors will be controlled.

To that end we had experts on odor pollution, control and mitigation take a look at the information and testimony offered by the Applicant. A copy of their evaluation is attached and well worth your time to review as it is very informative and not lengthy. Key takeaways include:

- The Best Management Practices (BMPs) on odors outlined by the Applicant are totally insufficient.
- The applicant has provided no project-specific data to support the conclusions they have drawn from the NOFT regarding potential odor impacts on surrounding properties. The published protocols for doing a NOFT analysis are very specific and detailed and without that information we have no idea whether they were properly used and applied with regard to this site.
- The level of odor impacts the Applicant has suggested as being acceptable is considerably greater than what the University of Nebraska NOFT authors have stated as being within the range of being a “good neighbor”, particularly when viewed in the context of real time annoyance to neighbors as pointed out in the attached report. The Applicant’s correlation of its “calculated” NOFT setback to the setback provided in the County’s zoning regulations to validate the supposed outer limit of the odor impact from the proposed facility is misguided at best.
- NOFT is only a limited analysis and is not definitive, and the NOFT guidance supports the need for additional analysis that includes evaluation of odor concentration and other factors to more accurately determine odor impacts.
- The absence of a detailed Odor Management Plan (OMP) for the proposed operation prevents the Planning Commission, the County Commissioners and the public from making a meaningful determination of the potential odor impacts, how odors are to be controlled, how odors will be monitored and measured, and exactly what levels are acceptable, among other things.
- The absence of a detailed OMP that includes objective odor standards will also make it virtually impossible for the County to take any enforcement action if it turns out that the Applicant has not controlled odors to a level that is not harmful or offensive to the neighbors and the community.

ECONOMIC IMPACTS

The Applicant has lauded the economic benefits that they believe will accrue to the county as a result of their proposed swine operation. On their face the benefits appear to be quite significant. We were not convinced and asked a widely known economist from Creighton University to take a closer look. Professor Ernie Goss’s evaluation is attached to this letter and is worth reviewing. Suffice it to say that although Settje Agri-Services & Engineering may be very good at designing and constructing swine confinement facilities, they are not economists. Key takeaways include:

- Although Settje relies on the UNL study, their estimates do not align with the study, thus greatly overstating job creation (by a factor of more than 2) and additional tax revenues, understating the additional cost to local government and ignoring hidden costs.
- Settje’s incorrect use of the multiplier methodology greatly overstates the economic benefit to the county. In short, they cited a multiplier range of 4 to 7 and used a multiplier of 6.7 when the proper range is actually 1.44 to 2, with 1.44 being the most appropriate multiplier.

- While this is not to say that the proposed operation would provide no economic benefit to the county, any benefit is nowhere near the magnitude suggested by Settje, and needs to be weighed against hidden costs as well as negative impacts on the health and quality of life for neighbors and on outdoor recreation and tourism, among others. The construction and operation of a large hog confinement operation will likely result in the decrease of surrounding property values. This, too, negatively impacts Cherry County residents.

As always, we reserve the right to raise additional issues and concerns as we learn more about the facility and operations proposed in Conditional Use Application No. 001-20. However, the above considerations as well as those raised in our previous letters and testimony of others at the public meetings demonstrate that the application does not meet the requirements of the Cherry County Zoning Resolution. Accordingly, we respectfully request that the you recommend denial of the application.

Very truly yours,

A handwritten signature in black ink, appearing to read "Lee H. Hamann", written in a cursive style.

Lee H. Hamann

cc: Ed Brown (via email)
Jessica Coyle (via email)

ATTACHMENTS

SEE ATTACHED PAGES

30 December 2020

Mr. Lee H. Hamann
McGrath North Mullin & Kratz, PC LLO
First National Tower, Suite 3700
1601 Dodge Street
Omaha, NE 68102

Ref: ***Application filed by Len Danielski and Danielski Harvesting & Farming, LLC ("Applicant") for Conditional Use Permit 001-20 ("CUP")***

Subject: ***Applicants Assessment of Odor Impacts Related to the Proposed Land Use***

Dear Mr. Hamann:

SCS Engineers (SCS) was hired by your client, Mr. Edwin Brown, to review and comment on odor issues and concerns relative to the referenced Conditional Use Permit (CUP) application. SCS conducted a review of related documents, Planning Commission notes, and materials in support of our evaluation of how potential odor impacts are addressed in the CUP approval process. SCS is a national environmental consulting firm with over 70 offices. This project included inputs from SCS's national expert on odor studies and is a signatory of this letter report. More information on SCS Engineers and the contributors to this report can be found at our website www.scsengineers.com.

The Applicant has addressed odor issues in its efforts to obtain an exemption to the limit of swine animal production located on parcels in Cherry County NE. Toward this end, the Applicant provided a brief outline of Best Management Practices (BMPs) in its application¹ and provided testimony in a recent Cherry County Planning Commission meetings (November 12, 2020 and December 1, 2020)^{2, 3} that explained and later clarified an offset analysis that the Applicant performed using the University of Nebraska Odor Footprint Tool (NOFT). The NOFT is a novel analysis tool that helps users to determine offset distances from certain farming operations that can cause odors. These offsets are intended to protect neighbors and the public from unreasonable exposure to odors. **Resolving the odor impacts are central to obtaining an exemption to animal unit limits set by the Cherry County Zoning Resolution, and we believe the Planning Commission needs to evaluate the setback requirements in this case in a way that is consistent with the potential severity of odor impacts.** We fundamentally disagree with Mr. Settje's statement in the November 12th Planning Commission meeting that "the solution to pollution is dilution..." which is indicative of not being very knowledgeable about air pollution control. Below is a summary of our comments and concerns:

¹ Settje Agri-Services and Engineering, Inc., Raymond, NE, "Application for a Construction and Operating Permit, Valentine Feeders, Lenard Danielski, Cherry County, NE", Application for Conditional Use Permit 001-20, Cherry County, NE April 17, 2020.

² Cherry County Planning Commission, "Public Hearing on CUP 001/20 Danielski Harvesting & Farming LLC/Valentine Feeders Swine Facility to be used for Breeding, Gestation, and Farrowing", Cherry County Fairgrounds 4-H Building, 120 South Green St., Valentine, NE 69201, November 12, 2020.

³ Cherry County Planning Commission Transcript, "Cherry County Planning and Zoning Meeting, December 1, 2020", Valentine, NE



- **Best Management Practices (BMPs) for limiting odors that are outlined in the CUP application are very brief and nondescript.**⁴ The BMPs are limited to two categories: 1. Building Maintenance and 2. Manure Storage. More detail and specific actions should be described in the application. For example, how often will floors be cleaned and dried, to what capacity of manure build-up be allowed? Are disinfectants going to be used? If so what kinds and how often? What ventilation rates will be used in buildings to prevent dust, gas, heat, and moisture buildup? How often will exhaust fans be cleaned? Are there other control measures in consideration such as bio-scrubbers, ventilation filters, misting agents at perimeters, and other deodorizing applications that are readily available today? Are dietary measures considered for animal feed and if so what kinds and how effective are they?
- **The absence of a detailed Odor Management Plan (OMP) prevents the public from making a meaningful determination of the true odor impacts from the proposed action.** Since odor issues are central to this application and the proposed land uses are going to exceed existing animal unit cap by multiple factors, an OMP should be required as a condition of the CUP. The OMP should: 1. Detail the facility related sources of odor that make up the proposed operations, 2. List specific odor control measures that will be employed to minimize odor emissions from each identified source of the operation, 3. Provide a monitoring plan to ensure that control measures are effective and offsite odor concentration targets are being achieved, 4. Offer a means by which findings will be conveyed to the public and 5. Explain how complaints will be resolved.
- **BMP would require OMP to include mandatory odor monitoring by the Applicant throughout the life of the operation** and include detailed odor testing methodology and maximum odor thresholds that are not to be exceeded. This would entail conducting odor measurements using some established method such as a scentometer, portable olfactometer or Nasal Ranger.⁵ Consistent with industry and other state guidelines, odor concentrations outside of the setback zones need to be less than 5 to 7 dilution to threshold (D/T) levels or odor units (OU)⁶ after considering background odor levels. If odors exceed these levels, then the CUP should be conditioned to require immediate curtailment of operations until odor emissions can be reduced.
- **The Applicant's testimony and submitted information does not provide any specific input data that was used in the NOFT. Having such input data is vital to enable others in the public to evaluate the findings from the NOFT analysis performed by the Applicant.** The NOFT was designed to address a risk based determination of an offset distance from proposed swine operations that corresponds to areas where odors are expected not to be objectionable to most people for a specified period of time. **NOFT does not provide a setback that defines a "no-odor" zone.**⁷ NOFT takes information about a proposed farming

⁴ Setje Agri-Services and Engineering, Inc., Raymond, NE, "Application for a Construction and Operating Permit, Valentine Feeders, Lenard Danielski, Cherry County, NE", Application for Conditional Use Permit 001-20, Cherry County, NE April 17, 2020. Page 14

⁵ Yael Laor*, David Parker and Thierry Pagé, "Measurement, prediction, and monitoring of odors in the environment: a critical review", Reviews in Chemical Engineering. April 2014.
<https://www.researchgate.net/publication/269391832>

⁶ San Diego State University and California Integrated Waste Management Board, "Contractor's Report to the Board - Comprehensive Compost Odor Response Project", March 2007,
<https://www2.calrecycle.ca.gov/Publications/Download/841>

⁷ Chris Henry, P.E., and Rick Stowell, Ph.D., P.E. "Understanding Odor Footprints and the Odor Footprint Tool", University of Nebraska - Lincoln Extension. https://water.unl.edu/documents/OFT_FAQ.pdf

operation and then determines a representative odor emissions profile. This odor emissions profile is then combined with regional historical meteorological data and performs a dispersion calculation to forecast odor intensity at downwind locations throughout all compass directions. Once odor intensity is mapped for downwind locations, a risk analysis is performed to determine a distance that odor intensity is at or below a certain level (Odor Intensity of 2 or less) for a set percentage of the time (90% to 99%). This is called the "Annoyance Free Frequency".⁸ So the higher the percentage of time that odors will be below a set level, the setback distance from the source will need to be increased. Applicant appears to have misapplied the NOFT to back into the conclusion on setback distance it desires for its operation rather than do the calculations required by NOFT with facility specific data inputs in order to estimate actual potential odor impacts on neighboring properties. Applicant has failed to provide a copy of their data and calculations used in the NOFT to support their conclusion as to odor impacts at any given distance, whether inside the county's designated setback perimeter or outside of the perimeter, and should be required to provide that information so it can be objectively evaluated by the county and the public before proceeding further.

- **Agreement between the NOFT suggested setback and the existing Cherry County setback requirements is not a validation of the Applicant's NOFT analysis.** The Applicant states in testimony several times that there is agreement between the existing setback and the NOFT determined setback and offers this as a validation of his analysis. This could not be further from the truth – the existing setback is defined by Cherry County Zoning Resolution based upon the number of animal units. One would expect that an increase in animal usage, especially in terms of multiple factors of the 2,000 animal units, would increase the existing setback level.
- It should be noted, as previously stated above, that modeling odors using the NOFT to predict a setback does not denote a "No-Odor" impact at distances greater than the suggested setback. The NOFT assumes that an Odor Intensity of less than 2 is acceptable on a 0-5 point Odor Intensity scale.⁹ Odor intensity is defined as an indication of the relative strength of the odor above the recognition threshold.¹⁰ The more intense the odor, the more likely an individual citizen will be annoyed. An odor intensity of 2 is described as "noticeable, faint, and a little annoying"¹¹, odor intensity 1 is "slight, very faint and not annoying".¹² **Note that odor intensity level of 1 or 2 are not screened outside of the setback determined by the NOFT and people will experience those odors.**
- Based upon testimony at the planning commission meetings an "Annoyance Free Rate" of 96% was selected in the Applicant's analysis using the NOFT to determine setbacks.¹³ While the user manual for the NOFT suggests an Annoyance Free Rate of 96% in areas

⁸ Chris Henry, P.E., and Rick Stowell, Ph.D., P.E. "Understanding Odor Footprints and the Odor Footprint Tool", University of Nebraska – Lincoln Extension. https://water.unl.edu/documents/OFT_FAQ.pdf

⁹ Rick Stowell, Ph.D, P.E., et al, "Odor Footprint and the Odor Footprint Tool – An Overview", University of Nebraska – Lincoln Extension. <https://water.unl.edu/documents/OverviewOdorFootprint%20Tool.pdf>

¹⁰ ASTM. 1999. E 544-99: Standard practices for referencing suprathreshold odor intensity. In Annual Book of ASTM Standards. Philadelphia, PA: American Society for Testing and Materials.

¹¹ Define Odor Intensity 2 - ASTM. 1999. E 544-99: Standard practices for referencing suprathreshold odor intensity. In Annual Book of ASTM Standards. Philadelphia, PA: American Society for Testing and Materials.

¹² Define Odor Intensity 1 - ASTM. 1999. E 544-99: Standard practices for referencing suprathreshold odor intensity. In Annual Book of ASTM Standards. Philadelphia, PA: American Society for Testing and Materials.

¹³ Cherry County Planning Commission, "Public Hearing on CUP 001/20 Danielski Harvesting & Farming LLC/Valentine Feeders Swine Facility to be used for Breeding, Gestation, and Farrowing", Cherry County Fairgrounds 4-H Building, 120 South Green St., Valentine, NE 69201, November 12, 2020. Pages 41 thru 44.

where people are used to smelling farming odors, we feel that this situation warrants extra consideration due to the large size of the proposed operations. **Guidance by the NOFT authors further suggests that to be a "good neighbor" the annoyance free rate should be set at 98%.**¹⁴ It is SCS's opinion that 98% is the minimum value that should be used in this case based upon the large animal population that is proposed and noting the community concern that has been conveyed by numerous opponents at Planning Commission meetings regarding this application. A 96% "Annoyance Free Rate" means that 4% of time there will be objectionable odors (above Odor intensity 2) outside the setback. This averages to 1 hour per day of objectionable odor. If such impacts occur during the daylight hours, people will experience them potentially more than 10% of the time. This large of an impact is simply unacceptable.

- **No apparent consideration to terrain effects were applied in the use of the NOFT.** Inspection of topographic maps¹⁵ of the Cherry County region indicate that the Two Rivers Ranch and other nearby residences reside 200ft to 300ft below the mean elevation of the proposed swine operations. This possibly defines a grade of more than 2% which suggests that the **NOFT should consider terrain influences on the setback determination.**¹⁶
- **There are other more refined ways to determine odor impacts.** Methods exist to define odor in terms of Odor Concentration – NOFT guidance supports the need for this kind of analysis, but there is no evidence that the Applicant has done one. EPA approved dispersion models, such as AERMOD, which is commonly used by state agencies to permit facilities with air pollutant emissions, can be used to more accurately determine odor impacts from the proposed operations.¹⁷
- **The NOFT does not consider odors from manure spreading operations.**¹⁸ While it has been claimed that odors are minimal from these types of activities, there is literature that suggests that odors do occur from manure spreading, including application of liquid manure or effluent by injection. This activity would at least contribute to a background odor which would establish a new baseline that would add to the overall odor impacts. For example, the background odors as a result of manure spreading may be low, but when overlapping with swine facility operations odor impacts, the combined odor impact could result in the odor threshold being more easily exceeded. That is particularly important in this case because the Applicant's designated application sites cover many sections of ground for miles around the proposed facility.
- **The NOFT does not account for existing odors or upwind odor sources and any background levels of odors.** As mentioned above, odors can be additive and at times, depending upon

¹⁴ Rick Stowell, Ph.D., P.E., and Crystal Powers, "Determining Separation Distances Using the Nebraska Odor Footprint Tool: User's Manual for the Spreadsheet Tool", University of Nebraska - Lincoln Extension. <https://water.unl.edu/documents/Users%20manual%20-%20Spreadsheet%20NOFT.pdf>

¹⁵ Google Earth Pro, Google 2020, U.S Dept. of State Geographer, Data SIO, U.S. Navy, NGA, GEBCO.

¹⁶ Rick Stowell, Ph.D., P.E., and Crystal Powers, "Determining Separation Distances Using the Nebraska Odor Footprint Tool: User's Manual for the Spreadsheet Tool", University of Nebraska - Lincoln Extension. <https://water.unl.edu/documents/Users%20manual%20-%20Spreadsheet%20NOFT.pdf>, Page 9

¹⁷ Valentina Businia, Laura Capelli*a, Selena Sironia, Giuseppe Nanao, Andrea N. Rossib, Simone Bonatib, "Comparison of CALPUFF and AERMOD Models for Odour Dispersion Simulation", AIDIC, VOL. 30, 2012

¹⁸ Chris Henry, P.E., and Rick Stowell, Ph.D., P.E. "Understanding Odor Footprints and the Odor Footprint Tool", University of Nebraska - Lincoln Extension. https://water.unl.edu/documents/OFT_FAQ.pdf

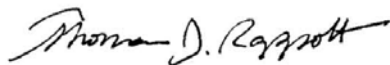
Mr. Lee H. Hamann
December 30, 2020
Page 5

a possible non-linear human response to odor detection, coincident multiple odor causing chemicals may cause a more heightened olfactory response by the public.¹⁹

In summary, SCS Engineers believes the NOFT can be a useful aid to farmers to estimate proper setbacks from confined animal feeding operations to limit public exposure to harmful and offensive odors when properly used, but it is by no means definitive, as pointed out in the paragraphs above. The Planning Commission should recognize that the NOFT is a calculation tool intended for planning purposes. Any decision based upon the output of the NOFT should rely upon reasonable evaluation of input data and assumptions used in the NOFT and that input data should be transparent to the public. Further, no exemption from the county's 2000 animal unit cap should be granted without specifically including a requirement for a detailed Odor Management Plan (OMP) with related monitoring that will serve to verify that the determined offsets are working with regard to certain odor thresholds and that the surrounding public is not subject to ongoing noxious and objectionable odors.

Should you have any questions or comments, please do not hesitate to contact the undersigned.

Sincerely,



Thomas Rappolt
Vice President
SCS Engineers



Michael J. Miller, CHMM
Vice President
SCS Engineers

¹⁹ [Susan S. Schiffman](https://doi.org/10.2527/1998.7651343x), "Livestock odors: implications for human health and well-being", *Journal of Animal Science*, Volume 76, Issue 5, May 1998, Pages 1343-1355, <https://doi.org/10.2527/1998.7651343x>

Evaluation of Settje Analysis of Hog Confinement Lot

ERNIE GOSS, PH.D., GOSS & ASSOCIATES

28 DECEMBER 2020



Summary of Goss major findings:

1. **SETTJE RELIES ON THE UNL STUDY BUT THEIR ESTIMATES DO NOT ALIGN WITH THE UNL STUDY**
 - UNL study (using Implan-see appendix for definition) estimated 2.08 jobs created for each 1,000 head of swine. SETTJE estimated 4.25 jobs created for each 1,000 head of swine.
 - UNL study estimated that each head of hog added in the county would create \$4.70 in added local tax collections compared to a much higher \$28.78 for each head of cattle added in the county.

 2. **SETTJE FAILS TO ESTIMATE LOCAL GOVERNMENT COST INCREASE DUE TO NEW WORKERS AND FAMILIES MOVING INTO CHERRY COUNTY FROM OUTSIDE.**
 - SETTJE estimates that 80 new workers would be hired to work in the lot. This would result in as many as 50 new students attending the public school system, many potentially needing ESL tutoring. SETTJE assumes that this additional cost is \$0.
 - SETTJE fails to estimate the costs of new roads, and or, increases in public road repairs.
 - Even without new roads/schools and other new infrastructure, the swine lot would cost local taxpayers an estimated \$81,131 per year in added local taxes.
 - SETTJE's estimates do not account for hidden costs such as decreased property values, negative impacts on outdoor recreation and tourism resulting from a hog confinement lot.

 3. **A CATTLE LOT EMPLOYING THE SAME NUMBER OF WORKERS (80 IN THIS CASE) WOULD CREATE:**
 - 4.34 times the total impact of a swine facility
 - 1.86 times the labor income (i.e. wages and salaries plus self-employment income)
 - 1.63 times the total jobs of a swine facility
 - 1.65 times the state and local taxes of a swine facility
-

Summary of Settje Errors or Faulty Assumptions ■

1. SETTJE EXAGGERATED AND MISCALCULATED CHERRY COUNTY'S PAST ECONOMIC PERFORMANCE IN TERMS OF:

- *POPULATION (SEE SLIDE 5)
- *JOB GROWTH (SEE SLIDE 6)
- *UNEMPLOYMENT RATE (SEE SLIDE 7)
- *LABOR FORCE PARTICIPATION (SEE SLIDE 8)
- *WAGE GROWTH (SEE SLIDE 9)

2. SETTJE USED THE INCORRECT METHODOLOGY

- *IMPLAN MULTIPLIER FOR HOG OPERATIONS, JOB = 1.19, OUTPUT=1.22 (SEE SLIDE 12)
- *SETTJE USES A ECONOMIC BASE MULTIPLIER OF 6.7 (GOSS CALCULATES AS 1.44, SEE SLIDE 12)
- *SETTJE USES A MULTIPLIER OF 4 TO 7.

3. SETTJE FAILS TO ACCOUNT FOR INCREASES IN LOCAL GOVERNMENT COSTS.


- *HOG OPERATION IS EXPECTED TO INCREASE LOCAL GOVERNMENT TAX COLLECTIONS BY \$220,424 (SEE SLIDE 13)
- *HOG OPERATION IS EXPECTED TO INCREASE LOCAL GOVERNMENT COSTS BY \$81,131 (SEE SLIDE 13)

4. SETTJE FAILS TO IDENTIFY THE SOURCE OF THE 80 WORKERS (SEE SLIDE 13).

- *IF WORKERS COMMUTE FROM OUTSIDE THE COUNTY, SETTJE ECONOMIC IMPACTS IN CHERRY COUNTY ARE TOO HIGH SINCE WAGES WILL GO TO OTHER COUNTIES.
- *IF WORKERS MOVE FROM OTHER COUNTIES, STATES OR NATIONS, SETTJE FAILS TO ACCOUNT FOR THE COST TO PUBLIC INFRASTRUCTURE SUCH AS SCHOOLS.

SETTLE MIS-STATES, OR INACCURATELY DEPICTS CHERRY COUNTY'S PAST ECONOMIC PERFORMANCE

Comparison of Cherry County's Economic Performance (Slides 5-9)



Performance metric: Population growth, 2010 to 2019

Geography	Annual 2010	Annual 2019	% change 2010-2019	Compound annual growth rate (CAGR)
Statewide	1,829,542	1,934,408	5.7%	0.6%
Metro counties	1,147,242	1,264,667	10.2%	1.1%
Micropolitan counties	326,562	326,502	0.0%	0.0%
Non-metro or micro counties	355,738	343,239	-3.5%	-0.4%
Cherry County	5,694	5,689	-0.1%	0.0%

Source: U.S. Census Bureau, Population Division

- The proper cohort for Cherry County are similar counties in the state of Nebraska.
- This requires classification of counties into the following buckets; Metro Counties (counties in a metropolitan statistical area); Micro Counties (counties in a micropolitan statistical area) and the balance of the state (counties in neither a MSA nor a MicroSA).
- Such a classification allows for a more robust, complete understanding of Cherry County performance, as MSAs are significantly larger and MicroSAs are centered around first-class cities such as Hastings, Kearney and Norfolk.
- From 2010 to 2019 Cherry County population declined by a modest 0.1 percent, which compares favorably to the Non-metro or micro counties group (-3.5 percent) and is on par with the Micropolitan group (0.0 percent)

Cherry County outperformed the cohort group and is on par with the Micro-county group



Performance metric: Job growth, 2010 to 2019

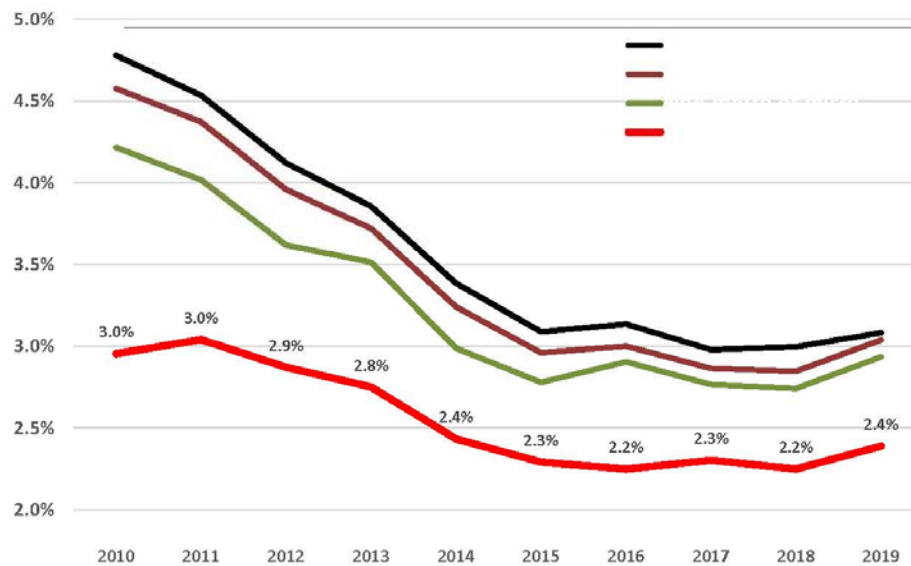
Geography	Annual 2010	Annual 2019	% change 2010-2019	CAGR
Statewide	896,936	982,504	9.5%	1.0%
Metro counties	596,779	665,831	11.6%	1.22%
Micropolitan counties	153,019	158,639	3.7%	0.40%
Non-metro or micro counties	133,647	135,568	1.4%	0.2%
Cherry County	2,250	2,289	1.7%	0.2%

Source: Bureau of Labor Statistics, QCEW

- From 2010 to 2019, Cherry County labor market performance outpaced its cohort group, increasing total jobs by 1.7 percent compared to 1.4 percent for the other non-metro or micro counties.

Cherry County outperformed the cohort group.

Performance metric: Unemployment rate, 2010-19



- The unemployment rate in Cherry County was lower compared to all county classifications for the 2010 to 2019 period.
- Cherry County's average unemployment rate was 2.6 percent, 70 basis points below the cohort group rate.

Cherry County outperformed all county groups.

Performance metric: Labor force participation rate (2019)

Geography	Participation rate
Statewide	69.7%
Metro counties	71.3%
Micropolitan counties	68.1%
Non-metro or micro counties	65.6%
Cherry County	71.2%
Source: U.S. Census, American Community Survey	

- Cherry County works!
- Cherry County's labor force participation rate (71.2 percent) exceeds both its cohort group and the micro-county group. It is essentially on par with the metro rate.
- Is labor capacity an issue for Cherry County? **Note:** The U.S. Census reports that 25 percent of workers employed in Cherry County commute from outside of the county (Longitudinal Employer-Household Dynamics, U.S. Census).

Cherry County outperformed the cohort group and the Micro-county groups. Cherry County is on par with the Metro-county group.

Performance metric: Wage growth, 2010 to 2019

Geography	Annual 2010	Annual 2019	% change 2010-2019	Compound annual growth rates (CAGR)
Statewide	37,324	47,854	28.2%	2.8%
Metro counties	39,849	50,386	26.4%	2.6%
Micropolitan counties	32,195	41,287	28.2%	2.8%
Non-metro or micro counties	30,049	39,105	30.1%	3.0%
Cherry County	23,600	31,792	34.7%	3.4%

Source: Bureau of Labor Statistics, QCEW

- From 2010 to 2019, Cherry County wages grew 34.7 percent, easily outdistancing all county classification groups.
- Its compound annual growth rate was 3.4 percent for the 10 years ending in 2019.
- Wages support the bulk of consumer household spending and are not subject to concerns regarding household type or size that can create statistical noise in other income measures, such as mean or median household income.

Cherry County outperformed all county groups.

Settje used incorrect
methodology
(Slides 11-13)



Settje's use of base multiplier methodology

- The base multiplier methodology is a blunt instrument that assumes “base” industries are homogeneous with respect to economic impact.
- Fails to “follow-the-money” and does not provide detailed, robust analysis.
- Industry impacts vary considerably: wages vary, input costs vary, transportation costs vary and productivity varies – all influence the flow of income in the economy.
- The 6.7 multiplier stated by Settje does not conform with the base multiplier methodology.
- The multiplier calculated using standard base multiplier methodology results in a significantly smaller employment multiplier.
- **Multiplier range: 1.44** (includes all non-disclosed industries in the denominator) **to 2.00** (excludes all non-disclosed industries from the denominator) **(Settje uses a multiplier of 4-7 which is well outside the bounds of believability)**

Base multiplier, Cherry County (2010-2019)

Employment multiplier using Base Mult. Methodology	207 415 2.00	Change in total farm and private employment with Location quotient (LQ > 1.00) LQ > 1.00 indicates industry is exporting Change in total farm, government and private employment
Employment multiplier using Base Mult. Methodology	288 415 1.44	Change in total farm and private employment with LQ > 1.00 Change in total farm, government and private employment

Methodology source: PropertyMetrics.com (web-based commercial real estate analysis software co.) $LQ = (\% \text{ of Cherry county industry employment}) / \% \text{ of U.S. industry employment}$

IMPLAN multiplier system: Detailed, robust results for Cherry County Comparison of 80 worker swine facility with an 80 worker cattle lot

Annual impact (2020 dollars)	Animal production: swine	Animal production: cattle	Difference: Swine to cattle
Output (sales at all stages of production)	\$10,719,400	\$46,542,818	-77%
Value-added to regional economy	\$6,631,377	\$12,140,502	-45%
Employee wage and salary income	\$1,148,031	\$2,866,183	-60%
Small-business owner income	\$953,890	\$1,044,297	-9%
Total jobs (direct+indirect+induced)	95.4	155.6	-39%
State and local tax revenue	\$863,551	\$2,697,399	-68%

Source: Goss and Associates using the IMPLAN multiplier system

- IMPLAN multiplier system follows the money from direct company spending to additional business-to-business spending to employee household spending.
- IMPLAN uses multipliers that account for “leakages” in income (e.g., payments for taxes).
- IMPLAN sector for hog confinement lots is sector 14 (first column in the table above) – **the employment multiplier for CHERRY COUNTY is 1.19 (note: expanding geography coverage like NPPD study over multiple non-metro counties will allow for expanded economic activity within the geo and a larger employment multiplier). Also, the 2002 NPPD study may have used TYPE II multipliers that do not account for leakages such as taxes.**
- **Value-added per direct employee** (I believe similar measure to NPPD study) is **\$69,150.85** (\$5,532,068 direct value-added/80 employees).
- For each \$1 million in sales == 9.1 jobs are directly impacted [80 direct jobs/(\$8,796,231 output/\$1,000,000)].
- Settje may slide in cattle (livestock) impacts for swine – as table above presents the impacts are significantly different:
 - All impacts are significantly less for swine production compared to cattle production.**
 - Analysis for cattle production can not be used as a proxy for swine production.**

IMPLAN multiplier system: Fiscal impact, Cherry County (2020 \$\$s)

Animal Production: Swine production	State	Local	Total	Type	Expenditure (\$s)
Sales tax	\$118,870	\$24,347	\$143,217	State government costs	\$45,636
Property tax	\$0	\$152,326	\$152,326	Local government costs	\$81,131
Individual income tax	\$38,937	\$0	\$38,937	Total government costs	\$126,767
Corporate income tax	\$36,530	\$0	\$36,530		
Other taxes and fees	\$17,014	\$43,751	\$60,765		
Total tax revenue	\$211,351	\$220,424	\$431,775		
Source: Goss and Associates using the IMPLAN multiplier system				Source: Goss and Associates using the IMPLAN multiplier system	

- Total local tax revenue are estimated to increase by \$220,424, annually – activity at the project will increase local government expenditures by \$81,131, annually.
- Factors potentially impacting the local fiscal impact:
 - Labor demand at the project is met by commuters from outside of the county: This could result in fiscal leakage from the county, resulting in lower than estimated sales, property and “other tax” collections.
 - Labor demand at the project is met by in-migration of workers from outside of the county: This could result in greater than estimated local government cost, especially for local school districts.

What is Implan?

"IMPLAN is an economic impact assessment software system. The system was originally developed and is now maintained by the Minnesota IMPLAN Group (MIG). It combines a set of extensive databases concerning economic factors, multipliers and demographic statistics with a highly refined and detailed system of modeling software. IMPLAN allows the user to develop local-level input-output models that can estimate the economic impact of new firms moving into an area as well as the impacts of professional sports teams, recreation and tourism, and residential development. The model accomplishes this by identifying direct impacts by sector, then developing a set of indirect and induced impacts by sector through the use of industry-specific multipliers, local purchase coefficients, income-to-output ratios, and other factors and relationships." <http://cier.umd.edu/RGGI/documents/IMPLAN.pdf>

WHAT IS THE ECONOMIC BASE MODEL?

THE **ECONOMIC BASE MODEL** SAYS THAT THERE IS SOME EMPLOYMENT IN A REGION WHICH IS SERVING THE LOCAL MARKET AND SOME EMPLOYMENT WHICH IS INDEPENDENT OF THE LOCAL MARKET. THIS LATTER EMPLOYMENT IS CALLED **BASIC** EMPLOYMENT. THE OTHER EMPLOYMENT IS CALLED **LOCAL-MARKET-SERVING** EMPLOYMENT. THIS MODEL ASSUMES THAT THE RELATIONSHIP BETWEEN THE BASE AND NON-BASE REMAINS CONSTANT WITH BOTH SMALL AND LARGE CHANGES IN THE ECONOMY.

Ernie Goss, Ph.D. is the Jack MacAllister Chair in Economics at Creighton University. He is also principal of the Goss Institute in Denver, Colo. Dr. Goss, a U.S. military veteran, is a former faculty research fellow at NASA's Marshall Space Flight Center. He was a visiting scholar with the Congressional Budget Office. He has published more than 100 research studies focusing primarily on economic forecasting and on the statistical analysis of business and economic data. His book Changing Attitudes Toward Economic Reform During the Yeltsin Era was published by Praeger Press, and his book Governing Fortune: Casino Gambling in America was published by the University of Michigan Press.

He is editor of Economic Trends, an economics newsletter published monthly with more than 10,000 subscribers, produces a monthly business conditions index for the nine-state Mid-American region, and conducts a survey of bank CEOs in 10 U.S. states. Survey and index results are cited each month in approximately 100 newspapers; citations have included the New York Times, Wall Street Journal, Investors Business Daily, The Christian Science Monitor, Chicago Sun Times, and other national and regional newspapers and magazines. Each month 75-100 radio stations carry his Regional Economic Report.