

IT'S TIME TO TAKE A SECOND LOOK AT IOWA'S MASTER MATRIX

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I. INTRODUCTION

Agricultural production is paramount to Iowa's economy and culture. With 30,500,000 acres operated by nearly 87,000 farm operations, agriculture and food production are by far the largest industries in the State.¹ While this brings economic growth to the Iowa, it does not come without consequences. Water quality, air quality, food safety, and nuisance laws are all hot-topics directly implicated by Iowa's agricultural roots. In order to mitigate the costs of agricultural production, Iowa introduced the Master Matrix, a points-based system designed to weed out producers who are considered unsuitable for the community.² Though well-intended, critics have panned the Master Matrix as too lenient toward large

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1. *2017 State Agriculture Overview*, U.S. DEP'T AGRIC., (2017), <https://perma.cc/CC7F-FASU>.

2. *See* IOWA CODE § 459.305 (2017).

agricultural producers, commonly referred to as confined animal feeding operations (CAFOs).³ Critics allege the Master Matrix's leniency allows CAFOs to wreak havoc on local communities and the environment while simultaneously taking away local control over these operations. This Note aims to explain where the Master Matrix is successful and argue how it can be improved to find a compromise between Iowa's populace and large agricultural producers. Part II will explain and explore the Master Matrix's details, origins, and requirements. Part III will address the critiques of the Master Matrix, specifically, nuisance and environmental concerns that critics claim the Master Matrix has failed to properly address. Part IV will detail the history of CAFOs and their benefits to Iowa's economy. Part V will expand on who is in control under the current formula, and whether the Master Matrix has any redeeming qualities. Finally, Part VI will evaluate whether the Master Matrix can be improved, as well as other solutions to the CAFO problems facing Iowa today. Ultimately, the purpose of this Note is to advocate for how the Master Matrix can be improved or replaced with an alternative system which balances the needs of all Iowans with a vital State industry.

II. THE MASTER MATRIX

Passed in 2002, the Master Matrix is a tool used by the Department of Natural Resources (DNR) in order to ascertain whether to approve the construction or expansion of a CAFO.⁴ The Master Matrix typically applies under two circumstances: (1) confinement feeding operations using unformed manure storage, and (2) confinement feeding operations of 1,000 animals or more using a formed manure storage.⁵ Iowa law prohibits any agricultural producer from discharging manure into any water of the state, including streams, lakes, ponds, marshes, waterways, wells, springs, reservoirs, or any other body or accumulation of water, either on the surface or underground.⁶ Thus, a producer must have the capacity to contain their manure discharge in between periods of land application.⁷

3. Rod Boshart, *Iowa Regulators Reject New Rules for Hog Confinements*, GLOBE GAZETTE (Sept. 18, 2017), <https://perma.cc/79LP-2UZT> (defining confined animal feeding operations as CAFOs).

4. See IOWA CODE § 459.305.

5. *Pre-construction Requirements for Permitted Operations*, IOWA DEP'T NAT. RESOURCES, <https://perma.cc/VJ84-TDHF> (archived Aug. 17, 2018).

6. IOWA PORK, MANURE MANAGEMENT REQUIREMENTS FOR CONFINEMENT OPERATIONS, <https://perma.cc/AGP6-63X9> (archived Aug. 17, 2018).

7. *Id.*

The Master Matrix requires a minimum score to receive a satisfactory rating, and thus be approved for construction or expansion in the area.⁸ For DNR to consider approval, facilities must obtain 440 points out of 880 (50%), including at least 25% available points in the subcategories of air, water, and community impacts.⁹ The Master Matrix measures factors such as the confinement's proximity to a residence not owned by the owner of the confinement, a hospital, a nursing home, or a childcare facility, and awards points on a graduated basis.¹⁰ For example, a proposed confinement structure within 501 to 750 feet of a hospital would receive a total score of 45 points, with 29.25 points in the air subcategory and 17.50 points in the community subcategory; 45 points is then used towards the total point requirement of 440.¹¹ There are 44 total questions whereby points can be earned depending on the logistics of the proposed confinement.¹² If the proposed confinement hits the 440 point threshold, the developer will submit the Master Matrix document, along with a manure management plan and a construction permit, to both the DNR and the auditor of the county where the proposed site sits.¹³ The county then has fourteen days to notify the public with the option to hold a forum before the county reviews and scores the application and then sends it to the DNR for a final review for approval or disapproval.¹⁴ The DNR has approved vastly more applications than they have denied.¹⁵ The Master Matrix must be passed annually by each county.¹⁶ Those who refuse to opt-in cannot use a local mechanism in lieu of the Master Matrix: meaning they abdicate any power over the approval of confined feeding operations in their county.¹⁷ In 2017, 88 out of 99 of Iowa's counties passed the Master Matrix, with Osceola, Wapello, and Warren counties, among others, opting-out.¹⁸ While counties can opt out of the Master Matrix, the fact that 89 of Iowa's 99 counties have adopted the Master Matrix Resolution implies the streamlined process through the DNR tends to be a more convenient

8. IOWA CODE § 459.305.

9. *Master Matrix*, IOWA DEP'T NAT. RESOURCES, <https://perma.cc/DR78-UMC6> (archived Aug. 17, 2018).

10. IOWA DEP'T NAT. RES., APPENDIX C, <https://perma.cc/9GCV-867Z> (archived Aug. 17, 2018).

11. *Id.*

12. *Id.*

13. IOWA CITIZENS FOR CMTY INVOLVEMENT, THE MASTER MATRIX, <https://perma.cc/62S3-LR6L> (archived Sept. 7, 2018).

14. *Id.*

15. *Id.*

16. *See Id.*

17. *Master Matrix*, *supra* note 9.

18. *88 Counties Opt In For Master Matrix*, IOWA DEP'T NAT. RESOURCES (FEB. 17, 2017) <https://perma.cc/R6VC-ADXE>.

and attractive option for the majority of Iowa's counties.¹⁹ However, the lower threshold needed to obtain approval from DNR, 440 points (50%) has nevertheless been criticized as too lenient on the developers of these operations.²⁰ It is difficult to ascertain the exact problem with the Master Matrix looking at the application itself. Instead, one must look at the environmental and social consequences due – in part – to leniency of the Master Matrix to get a full grasp on the costs of the Master Matrix.

III. THE PROBLEMS WITH THE MASTER MATRIX

A. Social and Community Costs: Nuisances and Property Values

The thought of a 1000-plus animal feeding operation (AFO) moving next door is enough incentive to put one's house on the market the very next day. Many rural Iowans face this reality when a confined feeding operation applies for a permit under the Master Matrix. These operations bring flies, run-off, rancid smells, and noise to the immediate community.²¹ An important nuisance case in Iowa is *Simpson v. Kollasch*, where the Supreme Court of Iowa ruled in favor of a proposed operation.²² Here, the neighbors of the CAFO brought suit under a theory of anticipatory nuisance, believing if the proposed operation were approved, they would suffer health issues, ground water would be harmed, odors would spread, and the value of their property would decline.²³ While the Supreme Court of Iowa found all of these claims to be mere speculation, *Simpson* perfectly outlined why these confined operations are so controversial and why the Master Matrix is directly implicated.²⁴

The plaintiffs in *Simpson v. Kollasch* had weak legal claims because the site had yet to be built, but many would-be plaintiffs encounter other obstacles in attempting to bring a nuisance action against a feeding operation.²⁵ For example, every state has a version of a right-to-farm statute, making it difficult for a

19. 89 Iowa Counties Adopt Master Matrix Resolution for 2018, IOWA CITIZENS FOR CMTY. INVOLVEMENT (archived Aug. 17, 2018), <https://perma.cc/KVA2-HLGS>.

20. IOWA CITIZENS FOR CMTY INVOLVEMENT, *supra* note 13.

21. *Why Are CAFOs Bad?*, SIERRA CLUB, <https://perma.cc/RXH2-2MVB> (archived Aug. 17, 2018).

22. *Simpson v. Kollasch*, 749 N.W.2d 671, 678 (Iowa 2008).

23. *Id.* at 673.

24. *Id.* at 675 (agreeing with the district court that found that the concerns about the potential health issues of the operation are speculative due to the distance of the operation from the plaintiff's residence).

25. *Id.* at 677 (explaining that the experts conceded they could not be certain that a nuisance will necessarily result if General Development is allowed to develop and operate Sow 1).

community member to sue a feeding operation either by a strict statute of limitations requirement or through expansive immunity.²⁶ Further, many property owners are unable or hesitant to move away due to declining property values after the establishment of a CAFO in the vicinity.²⁷

There are social costs to communities, as the establishment of CAFOs can cause disharmony between neighbors. In a recent Michigan case, a four-person family hog farm is attempting to establish a 5,000 head CAFO in the Sherman Township of Michigan.²⁸ Ed Schlabach, one of four members of Sturgis Farms, LLC, promised concerns expressed by the community will be unwarranted because the family's "reputation as farmers and as a family is at stake."²⁹ Though not definitive, Schlabach brings up a powerful point: in smaller communities, holding a large agricultural producer accountable may be easier since the producers also have to live and participate in the immediate community.³⁰ The article notes Schlabach, at his own expense, is including a filtering process hoping to reduce odor from the barns by about 50%.³¹

Opponents of Schlabach's facility concede under Michigan's right-to-farm statute that the power to prevent the facility from opening is granted to the state and not to the township or county.³² Community members are also concerned about the close proximity of the facility to a nearby lake and the possibility of contamination.³³ While the new facility is creating unease in the community, there is a positive effect. Schlabach was invited to the Conservation District Board's monthly meeting to flesh out the details of the facility.³⁴ Schlabach is confident any time he can open a dialogue about the issues surrounding the hog-farm, people become more at ease.³⁵ These discussions can improve accountability of the producer and provide a better business and living environment for everyone affected by the facility. This example, though hundreds of miles away, is a superb illustration of the social consequences of animal feeding operations (AFOs) and CAFOs.

26. Emily A. Kolbe, Note, "Won't You Be My Neighbor?" *Living with Concentrated Animal Feeding Operations*, 99 IOWA L. REV. 415, 428-29 (2013).

27. *Id.* at 429.

28. Jef Rietsma, *Farmer Gives Details of Swine Operation; Not All Residents Embrace It*, STURGIS J., (Feb. 9, 2018), <https://perma.cc/W5HT-7LZ8>.

29. *Id.*

30. *See generally id.*

31. *Id.*

32. *Id.*

33. *Id.*

34. *Id.*

35. *Id.*

In 2017, Governor Terry Branstad signed Senate File 447 into law, putting a cap on compensation nearby residents can collect on a civil lawsuit against neighboring livestock operations.³⁶ State Senate Republicans overwhelmingly supported the bill, arguing it kept agricultural producers safe from frivolous lawsuits, while environmentalists believe the bill “leaves rural Iowans who live near concentrated animal feeding operations (CAFOs) few ways to respond to livestock producers who are worsening their health and quality of life.”³⁷ Regardless of one’s stance on the bill or civil lawsuits against producers in this capacity, it is clear a solution to the problems within the Master Matrix will not be solved litigiously. Substantial changes or a complete overhaul of the approval process is needed in order to prevent nuisance from becoming an issue in Iowa communities in the first place.

Agriculture has been and always will be a cornerstone of the Iowa economy and culture. The Master Matrix is not entirely at fault for these problems, as these issues are typically present in other agricultural states. However, it is worth taking a better look in order to ascertain what can be done, if anything, for rural Iowans impacted by the establishment of feeding operations in their community.

B. Environmental Concerns – Water Quality

Water quality in Iowa is arguably the most controversial issue facing the state today. While legislators have argued over a solution for years, waterways in Iowa have become more polluted. Only 3% of monitored waterways in Iowa are considered excellent, while 72% are considered either fair, poor, or very poor.³⁸ Though both urban and rural populations contribute to water pollution, it must be noted factory farms across the country generate 500 million to 1 billion pounds of manure each year, three times more waste than the United States population annually.³⁹ In fact, one 1,400 pound cow can produce 17.7 gallons of feces and urine daily, which the operator of the feeding operation must legally dispose.⁴⁰ The amount of waste often has an effect on water quality downstream from these operations.⁴¹ CAFOs were first identified as potential pollutants by the federal government in the 1972 Clean Water Act, citing feedlots as sources for pollution

36. Carter Howe, *Senate Filed 447 Restricting Nuisance Complaints on CAFOs*, SCARLET & BLACK (Apr. 7, 2017), <https://perma.cc/5J4Z-N5WF>.

37. *Id.*

38. *Environment Iowa’s Frightening Facts about Iowa’s Waters*, ENV’T IOWA (Oct. 31, 2013), <https://perma.cc/W3NK-4XB5>.

39. *Id.*

40. *Why Are CAFOs Bad?*, *supra* note 21.

41. *Id.*

along with other industries.⁴² The waste from CAFOs contain an array of pollutants ranging from *E. coli* to growth hormones and antibiotics.⁴³ While this waste can be quite useful as fertilizer for the farming industry, many farms produce more waste than they can use on their own land.⁴⁴ While waste as fertilizer is the most common disposal method of CAFO waste, there is a limit to the amount of waste the ground can absorb.⁴⁵ The alternatives—liquefying, transporting it off-site or storing it until treated—have their own pros and cons, though storage can be problematic due to potential leaking or spillage of the waste.⁴⁶ CAFO waste can infect groundwater, which is the primary source of drinking water for Americans, accounting for 53% of the population.⁴⁷ There is little doubt CAFOs have directly impacted water quality in Iowa and across the nation. CAFOs are a vital part of Iowa's economy, however, the Master Matrix could better reflect these harmful effects through more stringent guidelines—allowing the public a larger say in whether or not a CAFO is approved or disapproved in their individual counties.

C. Environmental Concerns – Air Quality

In addition to water quality considerations, air quality concerns can arise in communities surrounding feeding operations. CAFOs in particular produce various particulate and gaseous emissions, typically due to the decomposition of waste and the movement of animals.⁴⁸ The most common emissions from feeding operations are ammonia and hydrogen sulfide, among other volatile organic compounds.⁴⁹ These compounds can have serious effects on neighboring communities and individuals. While the Master Matrix takes air quality into consideration, there are loopholes and miscalculations in reporting and measuring the affect an operation has on air quality.⁵⁰ Most recently, the D.C. Circuit Court ordered the Environmental Protection Agency (EPA) to close a loophole allowing substances released into the air to go unreported.⁵¹ The loophole issued by the EPA

42. CARRIE HRIBAR, UNDERSTANDING CONCENTRATED ANIMAL FEEDING OPERATIONS AND THEIR IMPACT ON COMMUNITIES 2 (Mark Schultz ed., 2010), <https://perma.cc/RQJ2-39C7>.

43. *Id.*

44. *Id.*

45. *Id.*

46. *Id.*

47. *Id.*

48. *Id.*

49. See *National Air Emissions Monitoring Study*, ENVTL. PROT. AGENCY, <https://perma.cc/9SE8-MGR9> (archived Jun. 12, 2019).

50. *CAFOs Ordered to Report Hazardous Pollution*, WATERKEEPER ALLIANCE (Apr. 11, 2017), <http://perma.cc/3SRB-ZF8X>.

51. *Id.*

exempted livestock farms from reporting hazardous emissions from animal waste.⁵² Reporting these emissions will allow the EPA and state agencies to keep better tabs on air pollution. Farmers will likely have to make large capital investments in order to keep emissions down and within the law.⁵³ Even with the closure of the loopholes, Iowa can make some adjustments to the Master Matrix to better take air quality into consideration when approving CAFOs.

D. Does the Master Matrix Fairly Contemplate These Environmental Impacts?

In light of these serious side effects of CAFOs, critics say the Master Matrix is too lax on its environmental requirements, and the process itself is complex to the point where many county officials do not fully comprehend the process.⁵⁴ This leads to a rubber-stamped approval of these operations by default.⁵⁵ Further, there is worry the Master Matrix inappropriately weighs each of the factors and gives points where points should not be given. For example, in some Iowa counties an applicant who has never owned a CAFO is entitled to points for never having a CAFO violation in the past.⁵⁶ While these points are meant to reward producers for operating within the law, it does not make sense to reward those who have never operated a CAFO in the past.⁵⁷ Despite objections from community members concerning adverse environmental effects, “[m]ore than 97 percent of proposed facilities get approved . . . ,” making it seem the proposed facilities take precedent over the worries of community members, who will be forced to live near the facility.⁵⁸ Attempts to strengthen the environmental standards of the Master Matrix have failed.⁵⁹ Iowa Citizens for Community Improvement and the Food & Water Watch filed a request with Iowa’s Environmental Protection Commission to create stronger rules and environmental protections under the Master Matrix.⁶⁰ Interestingly, members of the nine-person commission agreed with the activist groups who believe the Master Matrix needs to be reformed in regards to

52. Martin C. Heller et. al., *Court Ruling is a First Step Toward Controlling Air Pollution from Livestock Farms*, ASSOCIATED PRESS (May 4, 2017), <https://perma.cc/2GGC-XQSJ>.

53. *Id.*

54. SIERRA CLUB, IT’S TIME TO DUMP “THE MATRIX,” <http://perma.cc/79UD-9VYF> (archived Aug. 17, 2018).

55. *Id.*

56. *Id.*

57. *Id.*

58. James Merchant & David Osterberg, *DNR Scoring System Fails to Protect Iowans’ Air, Water, Health*, DES MOINES REG. (Sept. 7, 2017), <http://perma.cc/6DEL-36CS>.

59. Sarah Boden, *Attempt to Toughen Environmental Standards for CAFO Permits Fails*, IOWA PUB. RADIO (Sept. 18, 2017), <http://perma.cc/23GG-EGQG>.

60. *Id.*

environmental protections but ultimately denied the petition out of an alleged lack of jurisdiction and a desire to defer to the Iowa State Legislature to make these changes.⁶¹ While these are both fair points, they illustrate even Iowa's Environmental Protection Commission would like to see a reform of the Master Matrix.

Many counties in Iowa are also demanding changes. In May 2017, the Hardin County Board of Supervisors unanimously approved a resolution requesting state legislators to take a harder look at the Master Matrix and impose stricter environmental standards on potential feeding operations requesting a permit.⁶² Hardin County is not alone. At least 11 other counties, including Decatur, have written to the Governor and the Legislature seeking changes to the Master Matrix, specifically wanting stricter environmental standards.⁶³ Environmental protections are contemplated by the Master Matrix in its current form, but more and more counties, organizations, and individuals are demanding stricter environmental protections under the Master Matrix.

E. Animal Welfare Concerns

Another concern of CAFOs which is not necessarily contemplated by the Master Matrix is animal welfare—a hotly contested topic in Iowa because of the importance of animals as an economic commodity. The Iowa Alliance for Responsible Agriculture has lamented the rise of the CAFO, calling the negative consequences undeniable.⁶⁴ They believe there is “no way that thousands of livestock or hundreds of thousands of poultry can be treated humanely with the number of animals that are confined in the small spaces allowed in today’s confinement facilities.”⁶⁵

Additionally, Ag-Gag laws make it a crime for whistleblowers to report animal cruelty on farms.⁶⁶ House File 589 criminalizes investigative journalists and activists who take entry-level jobs in CAFOs or factory farms in order to document

61. *Id.*

62. Justin Ites, *Supervisors Want Changes to Master Matrix*, TIMES CITIZEN (May 31, 2017), <https://perma.cc/DQE5-JEYN>.

63. John Skipper, *Cerro Gordo Supervisors Seek Changes in State Hog Confinement Matrix*, GLOBE GAZETTE (April 18, 2017) https://globegazette.com/news/local/cerro-gordo-supervisors-seek-changes-in-state-hog-confinement-matrix/article_ccfc7ebf-1f63-5ee4-ba56-570dd766a760.html.

64. *CAFOs & Animal Welfare*, IOWA ALLIANCE FOR RESPONSIBLE AGRIC. <http://perma.cc/D6RM-NLDT> (archived Aug. 17, 2018).

65. *Id.*

66. Cody Carlson, *The Ag Gag Laws: Hiding Factory Farm Abuses From Public Scrutiny*, THE ATLANTIC (Mar. 20, 2012), <https://perma.cc/Y7VL-BKKU>.

food safety or animal cruelty issues.⁶⁷ On the federal level, there is very little protection for farm animals. Only the Humane Methods of Slaughter Act enacted by Congress covers farm animals, but exclude poultry altogether, and only protects livestock during the slaughtering process rather than throughout their lives.⁶⁸ Reforms to the Master Matrix could potentially include better animal welfare protection and more transparency.

IV. THE FLIP SIDE

While the environmental, social, and community impacts of CAFOs are well-documented, there is another perspective. The importance of CAFOs to Iowa's economy cannot be understated. It is vital to keep this in mind when contemplating any changes that would impose more restrictions and regulations on CAFOs and other feeding operations. Part IV of this Note will explore the history of CAFOs and the importance of CAFOs to Iowa's economy.

A. Brief History of CAFOs

The rise of CAFOs and large agricultural production coincides with industrialization in the 20th century and advances in agritechology.⁶⁹ Animal production facilities typically come in two flavors: the AFO and the CAFO. The EPA defines an AFO as a facility meeting two conditions: animals have been, are, or will be confined and fed for a total of 45 days or more in any 12-month period, and crops, vegetation, etc., are not sustained in the normal growing season over any portion of the facility.⁷⁰ The only difference between an AFO and CAFO is the size of the operation; CAFOs make up 15% of AFOs and are classified as an agricultural operation in which livestock live in a confined location.⁷¹

Before World War II, 24% of Americans were employed in some kind of agricultural practice, compared to only 1.5% now.⁷² This 1.5% is producing enough food to feed a growing population: meat production has almost tripled from 1950 to 2009, largely due to CAFOs and factory farms, as well as more efficient

67. *Id.*

68. Leana Stormont, *Detailed Discussion of Iowa Hog Farming Practices*, ANIMAL LEGAL & HIST. CTR. (2004), <https://perma.cc/Z679-ETH4>.

69. Elizabeth Overcash, *Detailed Discussion of Concentrated Animal Feeding Operation: Concerns and Current Legislation Affecting Animal Welfare*, ANIMAL LEGAL & HIST. CTR. (2011), <https://perma.cc/KFL8-8638>.

70. *Animal Feeding Operations*, ENVTL. PROTECTION AGENCY, <https://perma.cc/89AR-JPDY> (archived Aug. 17, 2018).

71. Overcash, *supra* note 69.

72. *Id.*

ranching practices.⁷³ This shift was also due to cultural changes. Americans view themselves as the solution to feeding the world, leading to the Green Revolution, a period of increased agricultural production thanks to developments in technology such as genetic selection, irrigation, and chemical fertilizers and pesticides.⁷⁴ These advancements made the availability of grain, and therefore animal feed much more affordable.⁷⁵ This drop in prices made it more feasible to raise livestock in higher concentrations than before and combined with mechanization of slaughterhouses – an early prototype of the CAFO was born.⁷⁶ The rise of the CAFO resulted in substantial production gains: “since 1960, milk production has doubled, meat production tripled, and egg production has quadrupled.”⁷⁷ These increases in production and decreases in cost brought food prices down globally and for the American family.⁷⁸ Despite the environmental effects, the CAFO has been an important entity in agricultural production, and there are legitimate benefits to CAFOs. The CDC summarizes the benefits of CAFOs as such:

When properly managed, located, and monitored, CAFOs can provide a low-cost source of meat, milk, and eggs, due to efficient feeding and housing of animals, increased facility size, and animal specialization. When CAFOs are proposed in a local area, it is usually argued that they will enhance the local economy and increase employment. The effects of using local materials, feed, and livestock are argued to ripple throughout the economy, and increased tax expenditures will lead to increase funds for schools and infrastructure.⁷⁹

There is enough room in the agricultural industry for both small and large scale production such as CAFOs. The trick is finding the right balance between the two and ensuring the presence and operation of CAFOs do not disrupt the community.

73. HIRBAR, *supra* note 42, at 2; *see generally* *Fast Facts About Agriculture*, FARM BUREAU, <https://perma.cc/2WKR-ZGJS> (archived Aug. 17, 2018).

74. PEW COMM'N ON INDUS. FARM ANIMAL PROD., *PUTTING MEAT ON THE TABLE: INDUSTRIAL FARM ANIMAL PRODUCTION IN AMERICA 3*, <https://perma.cc/8SMA-BVD8> (archived Sept. 10, 2018).

75. *Id.*

76. *Id.*

77. HIRBAR, *supra* note 42, at 1; *id.*

78. Monica Eng, *The Costs of Cheap Meat*, CHI. TRIB., (September 24, 2010) <https://perma.cc/3EZQ-7ANE>.

79. HIRBAR, *supra* note 42, at 2.

B. Importance of CAFOs to Iowa's Economy

Due to Iowa's position as an agricultural powerhouse, CAFOs have become a large part of Iowa's economy. Iowa's hog industry is especially important. According to the Iowa Pork Producers Association, Iowa had 6,266 hog operations at the end of 2012; 39% of these having 1000 pigs or less (and therefore would not qualify for CAFO status), meaning the remaining 61% are likely CAFOs.⁸⁰ In terms of an economic benefit, exports from Iowa in 2016 totaled more than \$1 billion being shipped internationally to countries like Japan, Canada, Mexico, and South Korea.⁸¹ In total, hog farming is approximately a \$7.5 billion economic activity for the state, which CAFOs are an integral part.⁸² Dairy farming is almost equally as important. Iowa State University found the dairy industry provided approximately 22,000 jobs and contributed around \$4.9 billion to Iowa's economy in 2012.⁸³ CAFOs are a large part of both subindustries and the economic benefit cannot be denied. The question is whether we can find a reasonable compromise with regulations while not stifling the economic benefits and growth. This may be possible through reforms to the Master Matrix.

V. WHO IS IN CONTROL, AND DOES THE MASTER MATRIX GET ANYTHING RIGHT?

Advocates for the Master Matrix are slim-to-none. Publicly, both Republicans and Democrats have stated they would like to see reforms in the near future.⁸⁴ Mark Kuhn (D-Charles City), who served in the Iowa State House of Representatives from 1999 to 2010, was one of the original drafters of the Master Matrix.⁸⁵ Kuhn believes it is time for a change to the Master Matrix, and the "current system is weighted heavily in favor of the livestock industry."⁸⁶ On the other side of the aisle, Representative Michael Sexton (R-Rockwell City) believes the Master Matrix could be improved by giving producers more points for environmental practices, such as bio-reactors or filter strips.⁸⁷ In fact, Rep. Sexton

80. *Iowa Pork Facts*, IOWA PORK PRODUCERS ASS'N, <http://perma.cc/QL5F-7H2R> (archived Aug. 17, 2018).

81. *Id.*

82. *Id.*

83. *Facts & Industry Links*, IOWA STATE DAIRY ASS'N, <https://perma.cc/NB8G-5PT6> (last accessed Jun. 12, 2019).

84. See Mark A. Kuhn, *Livestock Law Changes Needed to Balance Scale of Justice*, DES MOINES REG. (Jul. 25, 2017), <https://perma.cc/E7EA-D525>.

85. *Id.*

86. *Id.*

87. Joe Sutter, *County Still Hopes for Master Matrix Change*, MESSENGER (Sept. 20, 2017), <http://perma.cc/NF2R-QYL5>.

introduced House Bill 346, an act which would require the DNR to include additional water quality criteria in the Master Matrix.⁸⁸ The bill was introduced in February 2017 and currently awaits action during the upcoming legislative session in 2018.⁸⁹ Rep. Sexton, however, is not hopeful for the bill. While not officially dead, Sexton claims the DNR went to the Agriculture Chair, telling them not to bring the bill up.⁹⁰ Another State Senator, Tim Kraayenbrink (R-Fort Dodge), is similarly worried about reforming the Master Matrix, stating “if you open it up, you might end up with something that is not as friendly as what it was to begin with.”⁹¹ A number of petitions and letters have been sent from individuals and counties alike to the legislature, and it looks as though Governor Kim Reynolds has yet to comment specifically on the Master Matrix.⁹²

Similarly, the Iowa Environment Council (IEC), a non-profit and non-partisan council called for changes to the Master Matrix.⁹³ The IEC notes the vast majority of Iowa's tainted bodies of water are full of E. coli and nutrient pollutants that more often than not implicate manure from feeding operations.⁹⁴ The IEC believes there are too many loopholes in the Master Matrix and due to the way the points are calculated, it provides little protection to the environment and those living in the vicinity of the facilities.⁹⁵ The IEC is not alone. The Iowa Alliance for Responsible Agriculture (The Alliance) is also critical of factory farms and CAFOs, arguing the impact of these facilities on the health of Iowans is too high, especially when compared to traditional, lower volume farming operations.⁹⁶

The Alliance also points to an unfair tax loophole within the Iowa Code.⁹⁷ Iowa Code § 427.1(19)(e) allows for an exemption for pollution control and recycling, meaning personal property or improvements to real property used primarily to control or abate pollution of any air or water of the state receive a tax

88. H.F. 346, 86th Gen. Assemb. Reg. Sess. (Iowa 2017).

89. *Iowa House Bill 346*, LEGISCANN, <https://perma.cc/QMP3-JATM> (archived Aug. 17, 2018).

90. Sutter, *supra* note 87.

91. *Id.*

92. Donnelle Eller, *Petitioner to Tighten Rules on Livestock Facilities in Iowa Fails*, DES MOINES REG. (Sept. 18, 2017), <http://perma.cc/3NE4-5486>.

93. Ann Robinson, *IEC Speaks Out for Stronger CAFO Rules*, IOWA ENVTL. COUNCIL (Sept. 19, 2017), <http://perma.cc/9PBA-U2WT>.

94. *Id.*

95. *Id.*

96. *Impact of CAFOs on Your Health*, IOWA ALLIANCE FOR RESPONSIBLE AGRIC., <http://perma.cc/RB8Q-A6CP> (archived Aug. 17, 2018).

97. *Iowa Pit Tax Exemption*, IOWA ALLIANCE FOR RESPONSIBLE AGRIC., <http://perma.cc/S5H3-5MRG> (archived Aug. 17, 2018).

exemption.⁹⁸ The Alliance explains: “CAFOs are currently able to claim this exemption on the manure pits, even though these pits are later pumped out and the manure injected or sprayed onto the ground where it often directly enters the waterways and air.”⁹⁹ Estimates show this exemption outlined in the Iowa Code has resulted in approximately \$5 million in unrealized tax revenue for the state.¹⁰⁰ The Alliance has encouraged not only changes to the Master Matrix, but the removal of factory farms and CAFOs from the exemption.¹⁰¹

In response, Pat McGonegle, CEO of Iowa Pork Producers Association, believes the Master Matrix in its current form is satisfactory.¹⁰² In a statement to *The Des Moines Register*, McGonegle believes “Iowa already has some of the toughest ag regulatory laws in the country...[t]he [M]aster [M]atrix is a good system and it will continue to be without changes.”¹⁰³ McGonegle believes groups, such as Iowa Citizens for Community Improvement (CCI), and other critics make it more difficult for agricultural and livestock producers to operate in the state.¹⁰⁴ McGonegle accurately points out the chief concern with reforming the Master Matrix: the fine line between guaranteeing Iowans more protection from the negative effects of factory farming, while still maintaining the State’s reputation as a farming-friendly locale to conduct and operate business.

Despite its critics, the Master Matrix does have a democratic aspect: the ability of counties to opt-out of it. Every year, each county in Iowa must decide whether to opt in to the Master Matrix formula by January 31st.¹⁰⁵ Counties choosing to opt out can abdicate any input into the approval of feeding operations to the state.¹⁰⁶ In 2018, eighty-nine counties opted to use the Master Matrix, while ten counties—Davis, Des Moines, Keokuk, Lee, Mahaska, Osceola, Plymouth, Wapello, Warren, and Washington—opted out.¹⁰⁷ Interestingly enough, CCI, a strong critic of the Master Matrix, encourages all counties to adopt the Master Matrix because they believe it is only one of the ways citizens and counties can weigh in on the DNR’s decision.¹⁰⁸ Counties who have not adopted the Master

98. IOWA CODE § 427.1(19)(e) (2018).

99. *Iowa Pit Tax Exemption*, *supra* note 97.

100. § 427.1 (19) (e); *Iowa Pit Tax Exemption*, *supra* note 97.

101. *Iowa Pit Tax Exemption*, *supra* note 97.

102. Donnelle Eller, *Iowans Want Stronger Rules, More Local Control Over Animal Confinements, Groups Say*, *DES MOINES REG.* (July 18, 2017), <https://perma.cc/7VP7-9VGG>.

103. *Id.*

104. *Id.*

105. Press Release, Iowa Dep’t. Nat. Res., *Livestock Master Matrix Adopted in 89 Counties* (Feb. 8, 2018), <https://perma.cc/J38T-UCPK>.

106. *Master Matrix*, *supra* note 9.

107. Press Release, *supra* note 105.

108. *89 Iowa Counties Adopt Master Matrix Resolution for 2018*, *supra* note 19.

Matrix see it differently; Wapello County Supervisor Jerry Parked called the Master Matrix useless, stating “[the county] score[s] them, and it doesn’t mean anything.”¹⁰⁹ Parker, like other county supervisors who opt out of the Master Matrix, prefers to skip the paperwork and the procedures because the DNR will evaluate the site according to its own standards, effectively ignoring whether the county recommends the approval or not.¹¹⁰ This point is further demonstrated by the minuscule percentage of feeding operations denied since the Master Matrix has been in use.¹¹¹

VI. HOW CAN THE MASTER MATRIX BE IMPROVED? CAN IT BE SAVED?

As illustrated thus far, the Master Matrix can certainly be improved. Critics point to several common-sense solutions: allowing for more local control or setting the point threshold at a higher standard so producers must meet marginally more stringent requirements before being allowed to operate.¹¹²

A. Local Control and the Humboldt Court

One of the biggest gripes with the current Master Matrix formula is the lack of local control counties have over the requirements necessary to establish a CAFO. Advocates of reform want counties to have the ability to give meaningful input concerning the location of a proposed feeding confinement and add new factors depending on the needs of the particular county.¹¹³ But the Iowa Supreme Court has seemingly put a limit on the bounds of local control in regard to feeding confinements.

In *Goodell v. Humboldt County*, Humboldt County Supervisors adopted four local ordinances concerning large confinement feeding facilities.¹¹⁴ The four ordinances were: “(1) . . . a permit requirement prior to construction or operation of a regulated facility; (2) . . . financial security requirements; (3) . . . groundwater protection policies; and (4) . . . toxic air emissions from regulated facilities.”¹¹⁵ Facilities or individuals who did not comply with these ordinances were liable for a civil penalty of not more than \$100 per day for each violation.¹¹⁶ In a consolidated

109. Winona Whitaker, *Citizens Group Questions Master Matrix Standards*, OTTUMWA COURIER (Apr. 14, 2017), <https://perma.cc/8ZEB-NURT>.

110. *Id.*

111. See Merchant & Osterberg, *supra* note 58.

112. Eller, *supra* note 102.

113. *Id.*

114. *Goodell v. Humboldt Cty*, 575 N.W.2d 486, 489 (Iowa 1998).

115. *Id.*

116. *Id.* at 490.

action, the Humboldt County Livestock Producers brought suit against the county and the supervisors, seeking a declaratory judgment from the district court, arguing the ordinances were invalid and violated their constitutional rights.¹¹⁷ The district court upheld the first three ordinances under a county's home rule authority, but found Ordinance 25, concerning toxic air emissions, temporarily unenforceable.¹¹⁸ On appeal, the Iowa Supreme Court examined "two concepts: (1) a county's home rule authority, and (2) the state's power to abrogate or preempt local action."¹¹⁹ Under Iowa Code, a county

Except as expressly limited by the Constitution of the State of Iowa, and if not inconsistent with the laws of the general assembly, exercise any power and perform any function it deems appropriate to protect and preserve the rights, privileges, and property of the county or of its residents, and to preserve and improve the peace, safety, health, welfare, comfort, and convenience of its residents.¹²⁰

The court explains under this provision, "counties now have the authority to act 'unless a particular power has been denied them by statute,'" meaning the home rule power can be preempted by state law.¹²¹ In making its decision, the Court limited its scope to whether, under the Iowa Constitution and state statutory law, a county can regulate this particular area.¹²² The Court found state law preempted the home rule, and therefore the ordinances were invalid.¹²³ Professor Neil Harl explains the Humboldt decision:

the ball is back in the legislature's court to decide what, if any, authority should be left to local governments in the matter [of confinement livestock operations]. If nothing is done to pre-empt local control, counties will likely seek to draft ordinances that will be acceptable under the court's interpretation of limited home rule authority.¹²⁴

117. *Id.* at 490-91.

118. *Id.* at 491-92.

119. *Id.* at 492.

120. IOWA CODE § 331.301(1) (2017).

121. *Goodell*, 575 N.W.2d at 492 (citing *City of Des Moines v. Master Builders of Iowa*, 498 N.W.2d 702, 703-04 (Iowa 1993)).

122. *Id.* at 494 ("The wisdom of those ordinances is not before us. Nor is it our role to decide whether local government should be allowed to regulate livestock confinement operations. The question before us is simply whether, under the constitution and state law, the county can regulate in this area").

123. *Id.* at 509.

124. Neil Harl, *Goodell et al. v. Humboldt Cty.*, AGDM NEWSLETTER, Mar. 1998, <https://perma.cc/V8TQ-GZGB>.

How *Humboldt* applies to the Master Matrix is not entirely clear. The ordinances at issue in this case were invalid because they were irreconcilable with state law and attempted to revise the state regulatory scheme; if the ordinances merely set a more stringent standard than state law, the court hints these kinds of ordinances would be upheld.¹²⁵ The general consensus and something the dissent in *Humboldt* alludes to is this decision obliterated the home rule and left very little for local government control.¹²⁶ From this perspective, the Master Matrix as codified would preempt virtually all attempts by counties to adopt different or higher standards. Michael Carberry, supervisor of Johnson County, shares similar concerns.¹²⁷ Carberry comments, “[t]he matrix has really tied our hands” and has asked the state for to permit more local control and to strengthen regulations.¹²⁸ If counties who refuse to adopt the Master Matrix are already preempted by current state law, the issue of local control is seemingly settled until the state legislature takes action on the Master Matrix.

B. Improving the Master Matrix at the Statutory Level

The more likely answer is the Iowa State Legislature will eventually bow to mounting pressure and work on reforming the Master Matrix. State legislators from both sides of the aisle expressed a desire to see changes to the Master Matrix.¹²⁹ It seems it is now a question of when the legislature will take up the task. Advocacy groups have already thoroughly outlined the changes they would like to see to the Master Matrix.¹³⁰ Last July, CCI petitioned the DNR and the Environmental Protection Commission (EPC) to make changes to the Master Matrix.¹³¹ CCI reports they have toured the state to meet with Iowans about what changes they would like to see regarding the Master Matrix.¹³² Accordingly, the petition recommended: (1) a higher minimum passing score, (2) a one-time enrollment instead of an annual adoption of the Master Matrix, (3) revisions to the point structure in order to incentivize environmentally positive practices, (4) criteria considering new factors

125. *Id.*

126. *Id.*

127. Boshart, *supra* note 3.

128. *Id.*

129. H. File 346, 86th Gen. Assemb., Reg. Sess. (Iowa 2018); Kuhn, *supra* note 84.

130. Robert Bernard, Letter to the Editor, *Six Suggestions for a Stranger Master Matrix*, GLOBE GAZETTE (Sept. 18, 2017) <https://perma.cc/23GG-EGQG>.

131. *We're Going on Offense to Crack Down on Factory Farms*, IOWA CITIZENS FOR COMMUNITY IMPROVEMENT, <http://perma.cc/N5ZS-RSTD> (archived Aug. 17, 2018).

132. *Id.*

currently unconsidered, and (5) elimination of criteria providing arbitrary points allowing applicants to obtain extra points serving little purpose.¹³³

CCI is not the only organization recommending changes. In a letter to the Editor, Urbandale resident Robert Bernard sent six suggestions for fixing the Master Matrix.¹³⁴ Bernard would like to see better protection for people in terms of water and air quality, an increase in distance requirements between confinement and residential areas, stronger requirements for odor and pollution control, and an enhancement of removal of animal waste and excess products.¹³⁵ Bernard also points out an interesting loophole whereby businesses can break down a larger unit into separate facilities under Master Matrix threshold in order to rig the system.¹³⁶ Any improvements to the Master Matrix should address these kinds of loopholes in order to prevent facilities from gaming the system. Bernard recommends all CAFOs should be held to the same standard instead of having a threshold number of animals in a confinement.¹³⁷

Current efforts focus on reigning in CAFOs and factory farming through statutes. There are currently three proposed bills on the table for the 2018 legislative session. First, Senate File 131 would reduce the threshold for state regulation of hog confinements from 1250 to 650.¹³⁸ Senate File 328 would prohibit feeding operations on karst topography.¹³⁹ Karst terrain is typically barren, rocky ground with caves, sinkholes, and underground rivers which can provide pollutants from a CAFO access to other clean water sources.¹⁴⁰ Finally, House File 456 aims to give counties more control of siting operations.¹⁴¹ While this proposed legislation is a step forward in solving the shortcomings of the Master Matrix, it is not a substitution for reforming the Master Matrix formula itself.

VII. CONCLUSION

When enacted, the Master Matrix likely had good intentions in attempting to regulate the negative consequences of CAFOs while understanding their

133. *Id.*; see also Eller, *supra* note 102.

134. Bernard, *supra* note 130.

135. *Id.*

136. *Id.*

137. *Id.*

138. S.F. 131, 86th Gen. Assemb., Reg. Sess. (Iowa 2017); Erin Jordan, *Panel Urges Tighter Control of Feedlots in Iowa*, HAWK EYE (Nov. 25, 2017), <https://perma.cc/D5QD-YE83>.

139. S.F. 131, 86th Gen. Assemb., Reg. Sess. (Iowa 2017); Jordan, *supra* note 138.

140. Orlan Love, *Forum Explores Relationship Between Karst Livestock Operations and Water Quality*, GAZETTE (Jun. 6, 2017), <https://perma.cc/J5YT-LCKW>.

141. H.F. 456, 86th Gen. Assemb., Reg. Sess. (Iowa 2017); Jordan, *supra* note 138.

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importance to the state economy. However, as environmental quality has declined and as more of these confinements have popped up, a problem has been created fixed only by reformulating the Master Matrix. Activist groups, non-profit organizations, and Iowans across the state have given the Iowa Legislature the input and the tools they need to get the job done. It is now a waiting game to see when and how they go about implementing the changes the Master Matrix desperately needs.