

SLAUGHTERHOUSES IN WISCONSIN

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In 2019, there were 149 registered meat slaughterhouse operations in Wisconsin.¹ While the meat industry is an important part of the state culture and work, it is important to recognize the potential health and environmental impacts from insufficient or unenforced slaughterhouse regulations. Slaughterhouses can pollute nearby waters, damage air quality, and put workers' safety at risk.

WASTEWATER MANAGEMENT

Wisconsin slaughterhouses produce approximately 704 million gallons of wastewater every year,¹ full of animal waste such as blood, fat, urine, and feces, as well as chemical substances such as ammonia, nitrogen, and phosphorus. When infrastructure is available, wastewater can be sent down the drain to be treated at municipal sewer plants.

However, a Wisconsin Pollutant Discharge Elimination System (WPDES) permit from the Wisconsin Department of Natural Resources (DNR) allows discharges to surface waters or to subsurface soil absorption systems (SSAS) if wastewater is adequately treated. A SSAS is a soil-covered system where wastewater is applied via an in-ground system, at-grade system, mound system, or drip irrigation system.² A WPDES permit for SASSs requires significant pretreatment of slaughterhouse waste before discharge, as fats, oils, and high amounts of organic materials do not readily break down in these systems.⁴ However, no system removes waste 100% effectively, and other pollutants, especially nitrates, can still enter waterways. Surface water and groundwater discharges from meat processing operations are typically regulated under the same general WPDES permit.³

ENVIRONMENTAL AND HUMAN HEALTH IMPACTS

Slaughterhouses discharge pollutants with a high oxygen demand. This is typically measured in terms of "Biochemical Oxygen Demand" (BOD). BOD is the amount of oxygen required by bacteria to break down organic materials in the wastewater. When BOD levels are high, oxygen demands by the bacteria decrease the availability of oxygen for other aquatic organisms,

¹This approximation is based on a national study, which found that slaughterhouses produce a median of 352 gallons of wastewater for every 1,000 pounds of animals processed. Burkhart, Kira et al, *Water Pollution from Slaughterhouses*, Environmental Integrity Project, p. 8 (Oct. 11, 2018), https://www.environmentalintegrity.org/wp-content/uploads/2018/10/Slaughterhouse_Report_Final.pdf. In 2016, Wisconsin slaughtered nearly two billion pounds of beef cattle, calves, and hogs. Bussler, Greg et al, *2017 Agriculture Statistics*, U.S. Dep't of Agriculture, p. 53 (Sept. 2017), https://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Annual_Statistical_Bulletin/2017AgStats_web.pdf.

² Wis. Dep't of Nat. Resources, Industrial Liquid Waste to Subsurface Soil Absorption System Permit Fact Sheet, p. 2, <https://dnr.wisconsin.gov/sites/default/files/topic/Wastewater/55611FS.pdf>.

³Wisconsin Department of Natural Resources. Types of WPDES Permits. 2020. <https://dnr.wisconsin.gov/topic/Wastewater/DischargeTypes.html>,

resulting in dead zones. Through the Clean Water Act, the U.S. Environmental Protection Agency (EPA) set a monthly average BOD limit of 16 mg/L in 2004. However, the State of Wisconsin does not have a specific health standard for BOD that addresses Wisconsin-specific concerns and incorporates new science developed in the last 16 years.⁴ Rather, levels are based on historical loadings of previous years⁵ and may not exceed the federal level of 16 mg/L as a monthly average. If Wisconsin does not employ scientific health-based standards for BOD, Wisconsin cannot expect clear and safe waters.

Excess nitrogen, phosphorus, and pathogens can severely harm water quality by triggering algal blooms. The decomposition of algae consumes oxygen and creates dead zones of oxygen-poor water, literally suffocating aquatic life. Blue-green algae also create toxins that can cause nerve and liver damage in humans.⁶ High nitrate levels that end up in drinking water may also cause birth defects, increase the risk of thyroid disease, and increase the risk of colon, bladder, and ovarian cancer.⁷

Air pollutants associated with slaughterhouses include sulfur dioxide, nitrogen dioxide, particulate matter, and volatile organic compounds. Studies have shown that slaughterhouse workers and neighbors experience high rates of chronic lung and respiratory tract infections from these emissions.⁸ Even when concentrations are lower than the World Health Organization guidelines, they can still affect human health.⁹

Slaughterhouse operations may also be disproportionately susceptible to worker's rights and safety violations. In 2017, 34% of U.S. slaughterhouse workers were Hispanic or Latino.¹⁰ A study on a slaughterhouse in Illinois reported that "immigrants are drawn to the Beardstown plant because meatpacking pays better than other available jobs, such as picking crops, and you don't have to speak English to do it."¹¹ The median wage for slaughterhouse workers is \$14.43 per hour while farm laborers earned a median of \$12.36 per hour.¹² This preference due to higher pay may

⁴Burkhart, Kira et al. Water Pollution from Slaughterhouses. Environmental Integrity Project. 11 October 2018. (Pg. 10) https://www.environmentalintegrity.org/wp-content/uploads/2018/10/Slaughterhouse_Report_Final.pdf

⁵Wis. Admin. Code NR ch. 2018.14 (pg. 48) https://docs.legis.wisconsin.gov/code/admin_code/nr/200/208.pdf#page=2

⁶Bennett, Lauren. *Algae, Cyanobacteria Blooms, and Climate Change*. Climate Institute. 16 May 2017. <http://climate.org/algae-cyanobacteria-blooms-and-climate-change/>

⁷Wisconsin Department of Health Services. *Nitrate in Private Wells*. 7 October 2020. <https://www.dhs.wisconsin.gov/water/nitrate.htm>

⁸Ubuoh et al., 2017 Characterization of atmospheric gaseous components in abattoir operation site in Ogbo-hill, Abia state, Nigeria J. Environ. Anal. Toxicol. 2017. <https://www.hilarispublisher.com/open-access/characterization-of-atmospheric-gaseous-components-in-abattoir-operationsite-in-ogborhill-aba-abia-state-nigeria-2161-0525-1000474.pdf>

⁹Gilbert et al. Air quality and human health risk assessment in the residential areas at the proximity of the Nkolfoulou landfill in Yaoundé Metropolis, Cameroon. J. Chem. 2019. <https://www.hindawi.com/journals/ichem/2019/3021894/>

¹⁰Burkhart, Kira et al. Water Pollution from Slaughterhouses. Environmental Integrity Project. 11 October 2018. (Pg. 7) https://www.environmentalintegrity.org/wp-content/uploads/2018/10/Slaughterhouse_Report_Final.pdf

¹¹Ibid., 28.

¹²United States Bureau of Labor Statistics. Occupational Employment and Wages, May 2019. 51-3023 Slaughters and Meat Packers. 6 July 2020. <https://www.bls.gov/oes/current/oes513023.htm>

illustrate a wider trend across the Midwest. If so, procedures must be established to communicate workers' rights according to the Occupational Health and Safety Administration's (OSHA) laws and regulations. Operations should also train supervisors to effectively communicate rights to workers and overcome language barriers.

CURRENT REGULATIONS

The majority of regulations specific to slaughterhouses come from DNR and the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP). Water discharges and air emissions are main areas of pollution concern. Under NR 258.10, slaughterhouses must conform to effluent performance standards regarding fecal coliform from all discharges. Specifically, they must not exceed a Most Probable Number (MPN) of 400/100ml. As of 2018, the maximum BOD level may not exceed 0.12-0.21 depending on the type of slaughterhouse. Furthermore, NR 211.10(1) states that slaughterhouses cannot have "solid or viscous pollutants in amounts which will cause or contribute to obstruction to the flow in sewers or other interference with the operation of the [publicly-owned water treatment works (POTW)]." NR 211.10(1) is especially relevant in order to prevent large chunks of waste from clogging public waterworks. Operations typically install various floor traps as a solution.

In terms of odor and air quality regulations, ATCP 51.14 outlines a process for livestock facilities to calculate odor scores. However, facilities are exempt from this process if they are sited at least 2,500 feet from the nearest affected neighbor (residences or high-use buildings).¹³ However, wind conditions and landscape can still sweep air emissions towards those nearby.

In many cases, local government plays an important role in slaughterhouse siting. Traditionally, local governments could employ zoning laws to condition uses like slaughterhouses in certain zones on obtaining permits. Through these conditional use permits, local governments could protect local interests, health, and the environment. However, 2017 Wisconsin Act 67 significantly limited the authority of local governments to reject a proposed conditional use of land based on public health and safety concerns or community input.¹⁴ Previously, community input did not have to directly cite regulatory standards in order to have a valid health or safety concern about a facility. Now, residents are expected to be experts or have their worries ignored. Furthermore, responsibility is now on local governments to provide evidence as to why a facility may be harmful, rather than the facility having to prove that their mechanisms and protocol would protect from potential harm.

Additionally, under NR 151.096 and ATCP 50.60, local governments may not require more stringent livestock facility standards within their jurisdiction unless granted approval by DATCP or DNR. This prevents local governments from using their acute knowledge of the area to protect their citizens and the environment from potentially harmful loads of substances.

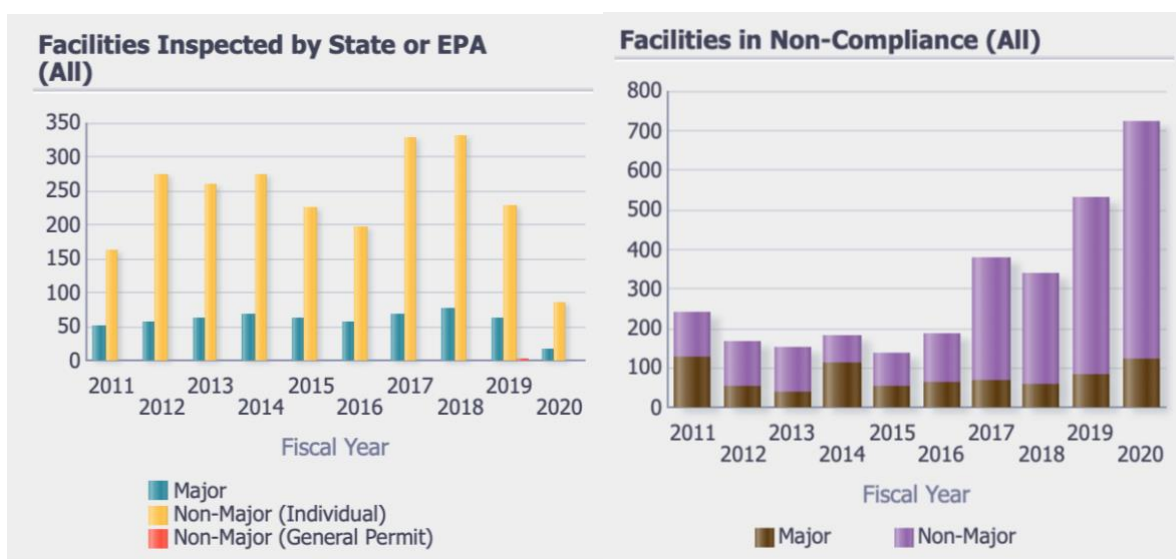
¹³Wis. Admin. Code ATCP ch. 51.14 https://docs.legis.wisconsin.gov/code/admin_code/atcp/020/51/II/14

¹⁴Mandell, Jeffery and Dregne, Matthew. 2017 Wisconsin Act 67 Makes Major Changes to Wisconsin Land Use Law. Stafford Rosenbaum Attorneys. 1 December 2017. <https://www.staffordlaw.com/blog/municipal-law/2017-wisconsin-act-67-makes-major-changes-to-wisconsin-land-use-law/>

WHAT NEEDS TO HAPPEN

As the administrative rules stand, meat establishment,¹⁵ food processor, and grease processor licenses¹⁶ must be renewed on an annual basis. However, inspections are only performed if the establishment is new or if a new owner is operating the establishment. It is the duty of the state to identify noncompliance, enforce appropriate penalties, and ensure issues are resolved. Inspections should be performed annually at all operations in order to achieve this, requiring a change in the relevant administrative rules.

In terms of penalties, Wisconsin is severely lacking in grit. Over the last ten years, the number of facilities subject to 5-year inspections by the State of Wisconsin or EPA stayed relatively constant, while the number of facilities in non-compliance in regards to National Pollutant Discharge Elimination Systems (NPDES) tripled.¹⁷ While only a portion of these facilities are specifically slaughterhouses, the overall trend illustrates the lack of agency follow-through.



Note that “non-major” denotes individual facilities, not the significance of the violation. “Major” denotes a facility with a design flow of at least one million gallons per day and/or a score of 80+ on the NPDES permit rating worksheet.²¹

Across all agencies, Wisconsin needs to crack down on violations by enforcing penalties. In the past five years, facilities in non-compliance were subject to enforcement action at a rate of 71% at best. This may be acceptable when taking into account non-compliance issues that were immediately addressed, such as late paperwork filing. However, at worst, only 48% saw enforcement action in a given year.¹⁸ This rate is far too low and it is unclear why enforcement rates are so inconsistent. If it is a matter of resources and personnel, the Environmental Integrity

¹⁵Wis. Admin. Code ATCP § 55.03.

¹⁶Wis. Admin. Code ATCP §§ 57.12-.14.

¹⁷Environmental Protection Agency. Analyze Trends: State Water Dashboard: ECHO. Wisconsin. <https://echo.epa.gov/trends/comparative-maps-dashboards/state-water-dashboard?state=Wisconsin&view=activity>

¹⁸Hair, David and Currey, Greg. Scope and Regulatory Framework of the NPDES Program. NPDES Web-Based Training. (pg 5-6) https://www3.epa.gov/npdes/pubs/scope_regulatory_framework.pdf

Project argues “lack of resources is no excuse – if needed, state agencies should collect fees from slaughterhouses and other major polluters to pay for the work needed to develop cleanup plans”.¹⁹ Holding polluters accountable creates a positive collective action problem. The more violations, the more work (and thus funds) needs to be provided. By creating internal industry pressure, there is a positive feedback loop between better compliance and reduced fees.

WPDES permitting must remain proactive in protecting waterways from further damage. The federal Clean Water Act requires states to reduce discharge limits in impaired waterways. However, 60% of 98 slaughterhouses studied across the nation discharged to already impaired water.²⁰ While this is a relatively small sample of slaughterhouses, two of the three samples from Wisconsin discharged to impaired waterways, correlating with the national rate and indicating a problem at the state level.²³ Wisconsin must consistently monitor where discharges are taking place and waterway health. If a waterway becomes at risk, DNR should modify or retract permits in a timely manner.

Furthermore, an investigation into slaughterhouse air permitting is due. It is unclear whether the lack of permits on the DNR website is due to poor record-keeping or a larger problem. If the majority of slaughterhouses are not being held accountable for air emissions, it is impossible to enforce clean air standards.

When state enforcement is not enough, communities have the right to take companies to court in an effort to comply with permits, requiring accurate and transparent monitoring records.²¹ Governor Evers’ administration should consider revising or revoking Act 67 changes in order to re-establish local control over slaughterhouse siting and environmental impact. Communities have a greater sense of ownership and pride of the land they reside on and are more likely to create policies that protect the environment and human health.²²

Finally, workers’ rights must be addressed in the context of the state. Wisconsin currently follows federal OSHA guidelines but has not created an OSHA-approved State Plan. Minnesota, Iowa, Illinois, Indiana, and Michigan all have State Plans that inherently are more effective than the generalized federal plan.²³ Wisconsin must follow the leadership of its neighbors and create a plan as to how its workers’ rights can better be met by the state and individual operations.

The presence of slaughterhouses creates a substantial negative effect on Wisconsin’s wellbeing. Effluent wreaks havoc on aquatic systems with algal blooms that also puts human health at risk. Emission permitting and regulation is in a gray area that assumes safety instead of acknowledging known dangers. Where local governments are better informed to handle issues, they have been

¹⁹Burkhart, Kira et al. Water Pollution from Slaughterhouses. Environmental Integrity Project. 11 October 2018. (Pg. 29)

https://www.environmentalintegrity.org/wp-content/uploads/2018/10/Slaughterhouse_Report_Final.pdf

²⁰Ibid., 8.

²¹Ibid., 30.

²²Peck, Joann et al. Here’s How to Help Visitors Care for Parks and Waterways. American Marketing Association. 19 November 2020. <https://www.ama.org/2020/11/19/heres-how-to-help-visitors-care-for-parks-and-waterways/>

²³United States Department of Labor. Occupational Health and Safety Administration. State Plans. <https://www.osha.gov/stateplans>

disenfranchised. Overall, the state must hold itself more accountable and recognize the impact slaughterhouses can pose to Wisconsin environment and health.