Executive Summary

Michigan is known as the "Water Wonderland." From the Great Lakes on all sides to the many streams, lakes, and rivers within, water is the essence of "pure Michigan." Unfortunately, these waters are facing grave risks due to the rise of industrial-scale agricultural pollution.

Every single day, the animals confined on Michigan's 290 largest livestock operations — known as Concentrated Animal Feeding Operations or CAFOs — generate 62.7 million pounds of feces and other waste. That's 17 million *more* pounds per day than the state's entire human population of 10 million. This report describes how that animal waste is generated, how it ends up polluting the state's waters and harming human health, and how the state's legal and regulatory system is failing to curb it.

Michigan is not alone in this battle. Harmful algal blooms and *E. coli* pollution are choking waters from coast to coast, from Lake Superior to the Gulf of Mexico. According to the U.S. EPA, nutrient water pollution, which drives harmful algal blooms, "is one of the most widespread and challenging environmental problems faced by our nation." But not every state has the same water legacy that Michigan has, nor the same opportunities to protect it. It is time to step up and seize these opportunities, for the health and economic future of all Michiganders.

"Best Management" Isn't the Best on its Own

Scientists, academics, environmentalists, and politicians all agree that nutrient runoff from agriculture is a key driver of harmful algal blooms, but they continue to debate the solution. Many years have been spent in pursuit of one approach: trying to get as many farmers as possible to voluntarily adopt a particular set of agricultural "best management practices," or BMPs. This approach isn't working. We need only look at Lake Erie — which remains green with hazardous algal blooms every summer and fall — to see that. Water testing data for nutrients and *E. coli* pollution only confirm that conclusion.

One problem is that there are not enough farmers willing to voluntarily adopt BMPs. The state's signature program has only been adopted by 17% of farmers in the Western Lake Erie Basin. Another key reason is that many BMPs do not work in Michigan's most CAFO-heavy watersheds; some can even make pollution worse. Indeed, the State of Michigan concluded years ago that even if 100% of farmers in the Western Lake Erie Basin were to adopt three voluntary BMPs each, that would still not be enough to stop the recurring harmful algal blooms.

Big Polluters Have Big Responsibilities

Michigan's 290 CAFOs — which constitute less than 1% of all farms in the state — produce an outsized proportion of agricultural pollution. For instance, CAFOs make up only 8.5% of all dairy "farms" in the state, but house 62% of the state's dairy cows. In just the past five years, 700 dairy farms closed in Michigan as the economics of running a smaller-scale farm get more difficult. By operating under permits which are both ineffective and inadequately enforced, CAFOs profit from economies of scale while unfairly externalizing their waste management costs onto Michigan's waters and the public that depends on those waters. Michiganders end up paying for CAFO pollution through taxes, utility bills, and lost access to safe clean water. The state's BMP approach adds to that burden by asking smaller farmers and producers to voluntarily take on costly, labor-intensive practices, which complicate their operations and may not even be effective. In unpacking the problem and seeking solutions, this report also asks a fundamental question about fairness:

> **Is it fair to continue putting the burden of cleaning up our water on the shoulders of Michigan's taxpayers and family-scale farmers?**

This report argues that the fairer approach is to treat CAFOs like the industrial-scale polluters they are. The "polluter pays" principle is widely accepted: if a steel mill or an oil refinery generates pollutants, they are responsible for making sure those pollutants do not harm the environment. The same principle should apply to CAFOs, which state and federal law recognize as industrial polluters like any other factory or mill. In practice, though, CAFOs are not held to the same standards.

If CAFOs were regulated like other industrial operations, they would have to either treat their waste before disposing of it, spend the resources to safely manage it, or produce less waste. And they — not taxpayers or other farmers — would be required to foot the bill. It is within Michigan's power to change that, and there is no justification for continued delay.

Michigan Can and Must do More to Tackle Pollution

This comprehensive report will provide recommendations for how Michigan can achieve cleaner water, including by better regulating CAFOs. **In short, CAFO permits and water standards need to be stronger, they need to be properly enforced, and the state needs to stop spending money on things that aren't working.**

This report also proposes new regulatory and statutory measures that could, if adopted, provide additional pathways for cleaning up Michigan's water. Finally, to the extent the state continues to employ voluntary BMP programs, this report recommends how those programs must be changed for there to be any hope of their effectiveness. The report will proceed in the following sections:

1. Background: What are CAFOs and How Do They Pollute Michigan?

2. CAFOs Benefit from Lax Regulation and Taxpayer Subsidies

3. Recommendations to Reduce CAFO Pollution

4. Conclusion

There is no single, silver bullet that will solve Michigan's CAFO water pollution problems. But there are policy changes at every level that could make a difference in turning the tide. These changes will shift the burden from taxpayers and family-scale farmers, who now carry the load, to the largest industrial-scale operations who can afford to do more, and must, given their legal obligations.