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THE OHIO STATE UNIVERSITY

Ohio Agriculture Conservation Initiative

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Good afternoon, Chairman Schaffer, Vice Chair Huffman, Ranking Member Fedor, and the members of the Senate Agriculture and Natural Resources Committee and thank you for the opportunity to testify today. I am Cathann Kress, and I serve as the Vice President for Agricultural Administration and Dean of the College of Food, Agricultural, and Environmental Sciences at The Ohio State University. Today, I not only represent our college and Ohio State, but I hope to increase your awareness of the unique partnership formed through the Ohio Agriculture Conservation Initiative and how our scientists and educators engage with it.

OACI was created in response to water quality challenges in Ohio and the recognition that it's a complex enough set of issues that it required all of us. CFAES has been involved with OACI since its formation in 2019. The goals of the organization are to assess farm practices in the state of Ohio and their relationship to the waters of the state, to promote continuous improvement in water quality in Ohio by increasing agriculture's adoption of best management practices, and to create a voluntary certification program for farmers implementing these practices. Adoption of these best management practices will further help farmers to adapt to the ever-changing climate and weather conditions that threaten agriculture. Adaptive management of climate and environmental-related issues is a key focus of CFAES, meaning that assisting and working with OACI merges perfectly with our college goals and our purpose as a land grant institution.

The creation of OACI was fundamentally different than any other partnership before as it brings together an innovative partnership between agriculture, conservation, environmental and research communities. In addition to being supported by Ohio State, CFAES and other leading academic institutions in the field, OACI brings together every major environmental and agricultural organization, making it an initiative and partnership that ensures the greatest likelihood of success. Just as we are convinced within CFAES, that we need to engage researchers from many disciplines, it's clear that the complex systems we hope to address through OACI, require the level of collaboration and commitment you see in this effort.

Through OSU Extension, CFAES supports OACI by conducting research focused on using natural systems to improve water quality and increase sustainability. This interdisciplinary research links field studies, watershed models, and socio-economic analyses with stakeholder groups to investigate connections between downstream water quality and management practices in upstream watersheds. For example, we are conducting on-farm research across Ohio focused on nutrient management plans and their positive impact on water quality. We also recently hired six water quality associates to work in northwest Ohio. Each of the new associates serves three to five counties and together, they are part of a

new effort by the CFAES Water Quality Initiative (WQI) to learn more about reducing nitrogen and phosphorus runoff while also boosting soil health, improving Lake Erie's water quality, and keeping the region's farms productive. The water quality associates are working with farmers to understand their views on what conservation practices are feasible while also improving water quality and increasing their production and soil health. Extension Farm Management personnel are additionally working to identify returns on investment for best management practices. Identifying and communicating these ROIs will ultimately ensure voluntary farmer adoption of best management practices in the long term. Finally, OSU Extension research regarding using manure as a side dress fertilizer for a growing corn crop has led to the wide adoption of the practice in western Ohio.

Ohio State has also been enlisted under H2Ohio to work collaboratively with the Lake Erie Aquatic Research Network (LEARN), ODNR, and researchers from five other Ohio universities in assessing the effectiveness and future role of implemented and planned wetland restoration projects. The collaboration will help us understand the inland and coastal wetland ecosystems connected to Lake Erie. The intention of this collaboration is to document the success of these long-term investments in water quality. Stone Lab, and Ohio Sea Grant - both of which are part of our college, are crucial to this project, as they have been the facilitator of research with Ohio institutions. Furthermore, Ohio State's pivotal role in the project shows faith in our institution as an invaluable source of trusted science-based information. Like other research conducted by CFAES, this work will also be beneficial to OACI's mission.

Agriculture in Ohio and throughout the country is experiencing a digital revolution. CFAES and OACI are working to incorporate new technology while also learning about agricultural practices. One of OACI's main projects involves planned surveys of farm fields in the Lower Maumee Watershed. The surveys, which will be designed by the Iowa Center for Survey Statistics and Methodology, will be conducted on farms by trained professionals. The surveys will focus on the nutrient management practices and considerations farmers are already taking, such as crop rotation, tillage practices, and cover crops. Additionally, they will take structural issues in fields into consideration, such as drainage ditches, inlets, and grassed waterways. This data will be recorded in a mobile app and will later be stored to the cloud at Ohio State for aggregation and statistical analyses. This data will provide insight into which best management practices are already being used, how effective they are, and what changes are needed to further protect water quality.

The data will help to inform OACI's certification program for farmers. The certification evaluates enrolled farmers on practices such as soil testing, nutrient application, nutrient placement, in-field management, and structural practices. Practices farmers implement to gain certification will also be collected by a mobile app. The certification program is a great example of how cutting-edge technology and efforts by OACI, CFAES, and H2Ohio are integrated and work in concert to reach the impactful water quality objectives.

Yet another illustration of how efforts already initiated through the CFAES and OACI partnership can directly benefit the H2Ohio program is the proposal for a pilot program in the Shallow Run watershed that was adopted in HB 110. The Natural Resource Conservation Service (NRCS) has approved $6.8 million for the proposal submitted by a statewide group of researchers and led by The Ohio State University. These researchers have developed a detailed proposal to implement a pilot program, located

in Hardin County. The program would complement the H2Ohio initiative by testing the effectiveness of conservation practices at the watershed scale (versus the field-level data currently available) and strategies to encourage higher rates of adoption among farmers. The results would help federal and state agencies make more informed decisions about cost share rates and provide agricultural retailers and soil and water conservation districts with new diagnostic and geospatial tools to optimize conservation practices for farmers. The program would also establish a watershed-scale model for others across the country working to address excess nutrient loading.

These examples illustrate how the work of OACI and CFAES goes hand in hand with Governor DeWine's H2Ohio program. OACI brings an unprecedented group of collaborators together to examine the relationship between water quality and agriculture, which furthers H2Ohio's broader ambitions to address water quality issues across the state. OACI has already brought all the players to the table regarding agriculture and water quality, meaning H2Ohio can use connections and research that have already been cultivated.

OACI and its partnerships, including its partnership with CFAES, enhance the H2Ohio program. One of the overarching purposes of H2Ohio is to find ways to reduce agricultural phosphorous runoff. The research conducted by CFAES, as well as the efforts by OACI to increase voluntary adoption of best management practices, perfectly complement H2Ohio, and will help the program succeed.

We remain committed to our land grant mission and to serve our state while addressing through research, education, and extension – the complex problems and opportunities before us. Thank you, Chair Schaffer, and members of the committee for allowing me to speak about the impact of OACI. I'm happy to answer any questions.