H2Ohio

H2Ohio Accomplishments for Fiscal Year 2020

"By investing in the state now, Ohio can ensure a better future for generations. H2Ohio is an example of how investing in safe and clean water for Ohioans today will pay long-term dividends."

– Mike DeWine, Governor

MIKE DEWINE
GOVERNOR OF OHIO

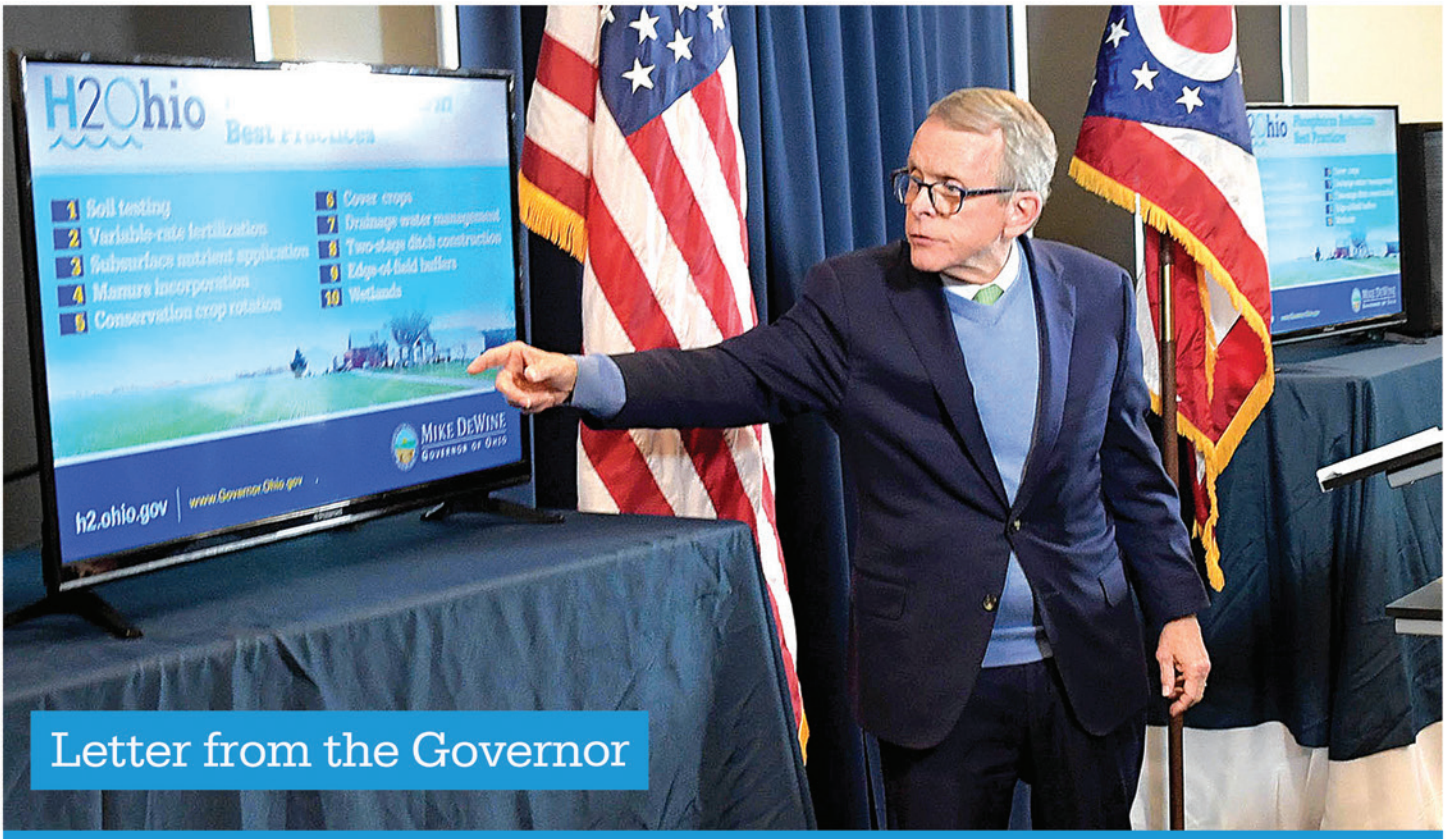
www.Governor.Ohio.gov

Ohio | Department of Agriculture

OHIO DEPARTMENT OF NATURAL RESOURCES

Ohio Environmental Protection Agency

Ohio | Lake Erie Commission



Letter from the Governor

Dear Ohioans,

In my 2019 State of the State Address, I stressed the importance of investing in Ohio's future and the generations of tomorrow. By investing in our state today, Ohio can ensure a better tomorrow for generations.

This first annual report about our H2Ohio Initiative lays out our investment in safe and clean water for Ohio. We cannot live without clean and safe water. Yet, communities throughout Ohio face serious water problems, including harmful algal blooms, failing septic systems, and lead contamination from lead drinking water pipes and fixtures.

I am grateful to the Ohio General Assembly for investing $172 million in our H2Ohio Initiative, a comprehensive, data-driven effort to address Ohio's water challenges, as well as the support from numerous communities, non-governmental groups, businesses, and universities to implement the program. The agencies tasked with implementing the H2Ohio Initiative have done a tremendous job in this first year.

We know that to make truly meaningful change and show results, the investment to prevent harmful algal blooms in the Western Basin of Lake Erie will need to be continued into the future. Our state's water problems happened over many years, and we won't solve them overnight. However, as communities see the progress being made in drinking and water infrastructure, they are asking for additional help. The H2Ohio Initiative can continue to provide an investment into safe and clean water in the future, and I look forward to working with the General Assembly to make that happen.

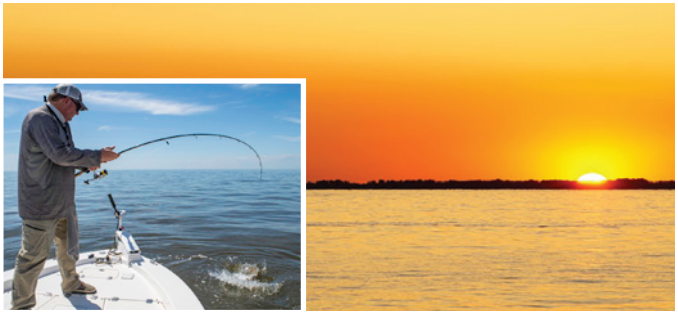
Very respectfully yours,

Mike DeWine
Governor of Ohio

Executive Summary

Providing Clean and Safe Water to Ohio

Ohio has many tremendous natural resources, and one of our most significant treasures is plentiful water. Lake Erie and the Ohio River border the state to the north and south, and there are nearly 8,000 inland lakes in Ohio, 2,227 of which are natural lakes. They range in size from small farm ponds to Grand Lake St. Marys, the largest inland lake in Ohio. Annual precipitation to replenish our surface waters varies throughout the state, with the northwestern part of the state averaging 32 inches each year, and the southern portion averaging 42 inches each year. Even though Ohio's waters are replenished, additional investment is needed to ensure clean and safe water for Ohioans.



We cannot live without water, and it is vital to Ohio's economy from farming to tourism to manufacturing. Water is something that people often take for granted—until it is either gone or unsuitable to drink or touch.

Though Ohio is a water-rich state, communities all across Ohio face serious water problems such as harmful algal blooms (HABs) on Lake Erie, the Ohio River and numerous inland lakes; failing septic systems; and contaminated drinking water from lead pipes and fixtures. These problems cause health concerns for Ohioans and negatively impact tourism, outdoor recreation, real estate, and other businesses relying on clean water.

Ohio has 60,000 miles of streams ranging from large rivers down to small, unnamed tributaries. Clean streams are critical to water quality in Ohio because our waters pass through them on the way to many lakes and ultimately into the Ohio River or Lake Erie. These streams recharge our ground water and refresh our lakes and reservoirs.

Early in 2019, Governor Mike DeWine proposed the H2Ohio water quality initiative to invest in targeted solutions to help ensure safe and clean water for Ohioans. In July, the Ohio General Assembly agreed to invest $172 million in the H2Ohio initiative. Since then, the agencies tasked with implementing H2Ohio have led a comprehensive, data-driven effort to address Ohio's water challenges. Through collaboration among the Ohio Department of Natural Resources (ODNR), Ohio Environmental Protection Agency (Ohio EPA), Ohio Department of Agriculture (ODA), and Ohio Lake Erie Commission (OLEC), H2Ohio will address critical water quality needs and innovative solutions to some of the state's most pressing water challenges.

By the Numbers

1 Million Acres
in voluntary nutrient management applications

185
lead service lines to be replaced

80,000
acres of watershed filtered by wetland projects

5,530
wetland acres to be created, restored or enhanced

670
number of people to be served by 3 new wastewater projects

4,000 People
to be served by 4 new drinking water projects

180
home sewage treatment systems to be repaired or replaced

3,000 Square Miles
of additional watershed to be monitored for nutrient content

20
new rain guages installed

H2Ohio is based on science and economics. Particularly in the effort to combat HABs in Lake Erie, H2Ohio relies on science to guide the state in assisting farmers in paying the costs associated with best management practices (BMPs) to keep excess nutrients from running off farm fields. H2Ohio relies on modeling to determine the most cost-effective practices in which to invest.

One focus of H2Ohio was to develop a new agriculture program to provide H2Ohio funding to farmers to implement BMPs on their farms. Many of these BMPs have been known for years, and there is a financial risk to farmers in implementing them. H2Ohio targeted the most cost-effective BMPs for farmers in 14 counties in the Maumee River Watershed.

Further, H2Ohio purchased an additional 20 rain gages to improve weather forecasting and rainfall estimates which will provide better information for decision making. H2Ohio funded a research consortium to study wetlands so that the state will learn how to maximize the nutrient reduction contribution for water quality.

Because nature often provides the best remedies, H2Ohio invested in 26 wetlands restoration projects in the state. Wetlands naturally improve water quality by trapping, filtering, or removing excess nutrients and other pollutants in surface water over time. Furthermore, wetland and floodplain restoration can help spread out high streamflow events, reducing downstream erosion and flooding. Nearly $30 million in H2Ohio funding is being spent to build 3,535 wetland acres, filtering the nutrients from over 60,000 acres of land.

While H2Ohio focuses substantial resources on addressing the recurring HABs problem in Lake Erie, additional work is happening throughout Ohio. H2Ohio's drinking and waste water infrastructure work is targeting disadvantaged communities, and the $8.675 million in H2Ohio funds that Ohio EPA received for this work leveraged $23 million in additional funds for infrastructure, home sewage, and lead remediation projects.

Though communities throughout Ohio have worked over the years to replace public lead service lines, H2Ohio funds will be used to replace lead service lines and lead fixtures for daycare facilities. Children are extremely susceptible to harm as a result of lead exposure.

The following pages provide a more detailed breakdown of the H2Ohio work undertaken by the Ohio Department of Agriculture, the Ohio Department of Natural Resources, and the Ohio Environmental Protection Agency.

Ohio Department of Agriculture

Providing Clean and Safe Water to Ohio

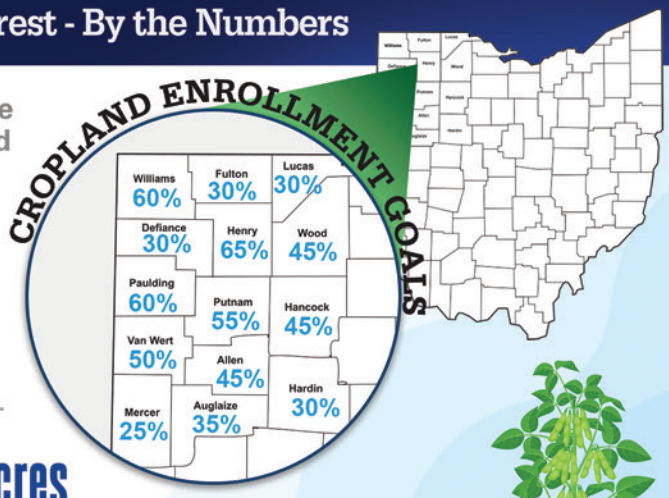
Plants need nutrients to grow, and farmers rely on nutrients to ensure the maximum crop yields. Unfortunately, too many nutrients become a problem if they run off the farm fields. Lake Erie is experiencing HABs because of nutrient runoff from farms. The Ohio Department of Agriculture's (ODA) H2Ohio program is specifically aimed at preventing nutrient runoff.

ODA's H2Ohio program is focused on the areas of Nutrient Management, Water Management, and Erosion Management. Using this three-pronged approach, ODA brought in McKinsey and Company, Inc. Washington D.C. to help analyze each possible BMP and narrow the field to the 10 most productive, cost effective, and practical to implement by producers in Ohio. After that review, 10 Best Management Practices (BMPs) were identified to address phosphorous issues and ensure long term clean and safe water for Lake Erie. Producers will be incentivized for implementing seven of these practices.

Program Interest - By the Numbers

The acreage to be enrolled is spread across the 14-county area.

ODA Program Goals



1,000,000 Acres

of Nutrient Management Plan Development representing nearly 36% of the cropland in the 14 counties

Nearly 2,000

producers participating in program and implementing BMPs

10 Best Mangement Practices

1 **Voluntary Nutrient Management Planning:** Nutrient management plans give farmers information on where to place fetilizer, when, and how much.

2 **Variable-rate fertilization:** Applying specific fertilizer levels based on the need of each sub-acre to reduce fertilizer application without risk of losing yield.

3 **Subsurface nutrient application:** Applying specific fertilizer below the surface to reduce nutrient loss.

4 **Manure incorporation:** Mixing manure into the soil to keep it in place and minimize nutrient loss.

5 **Conservation crop rotation:** Planting certain crops that reduce erosion and enrich the soil thus reducing runoff and sediment delivery.

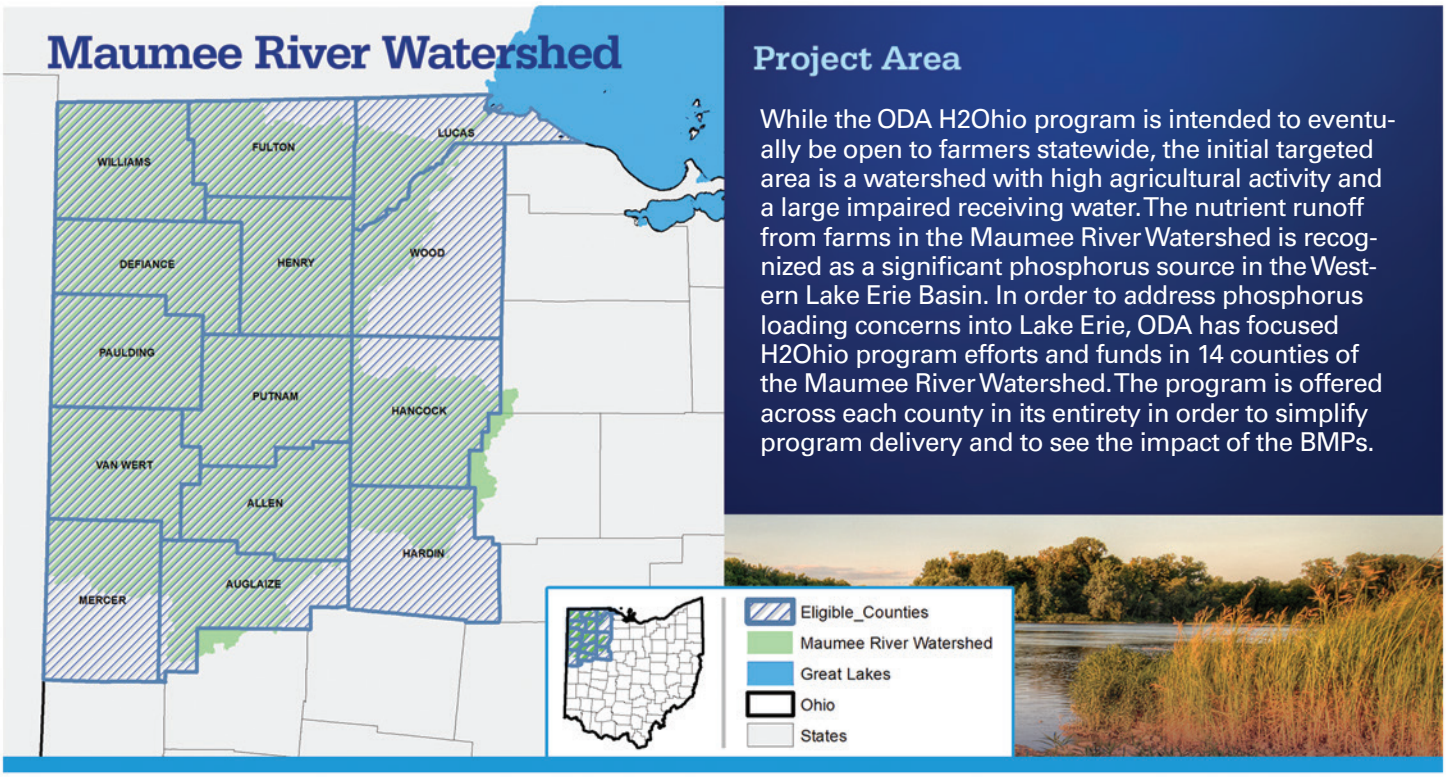
6 **Cover crops:** When planted after the main harvest, cover crops reduce erosion, hold nutrients in the soil, and improve soil health.

7 **Drainage water management:** Slowing down runoff to give phosphorus more time to settle back in the soil.

8 **Two-stage ditch construction:** Creating modified drainage ditches to slow water flow and allow the phosphorus to settle.

9 **Edge-of-field buffers:** When trees, shrubs or strips of grass are planted along farm fields in the right place, the plants hold on to phosphorus and prevent its release into the water.

10 **Wetlands:** Wetland vegetation and soils absorb phosphorus, slow down the movement of water, offer a natural filtering process, and allow phosphorus to settle.



Project Area

While the ODA H2Ohio program is intended to eventually be open to farmers statewide, the initial targeted area is a watershed with high agricultural activity and a large impaired receiving water. The nutrient runoff from farms in the Maumee River Watershed is recognized as a significant phosphorus source in the Western Lake Erie Basin. In order to address phosphorus loading concerns into Lake Erie, ODA has focused H2Ohio program efforts and funds in 14 counties of the Maumee River Watershed. The program is offered across each county in its entirety in order to simplify program delivery and to see the impact of the BMPs.

Program Structure

In order to implement practices as quickly as possible, ODA is focusing on seven practices in the initial H2Ohio program year. ODA, with the assistance of the Soil and Water Conservation Districts (SWCD), is helping producers implement BMPs. Edge of field buffers and two-stage ditches will be offered in future years of the H2Ohio program. Wetlands will be implemented by the Ohio Department of Natural Resources.

The first seven BMPs identified are typically implemented at the field or farm level by the landowner or operator. To encourage participation, ODA structured the program to allow crop producers to select which practices to implement on a field by field basis. Participants are encouraged to bundle practices together to increase conservation effectiveness. The result of this approach is an a la carte conservation menu from which crop producers can customize the program to their production and management practices.

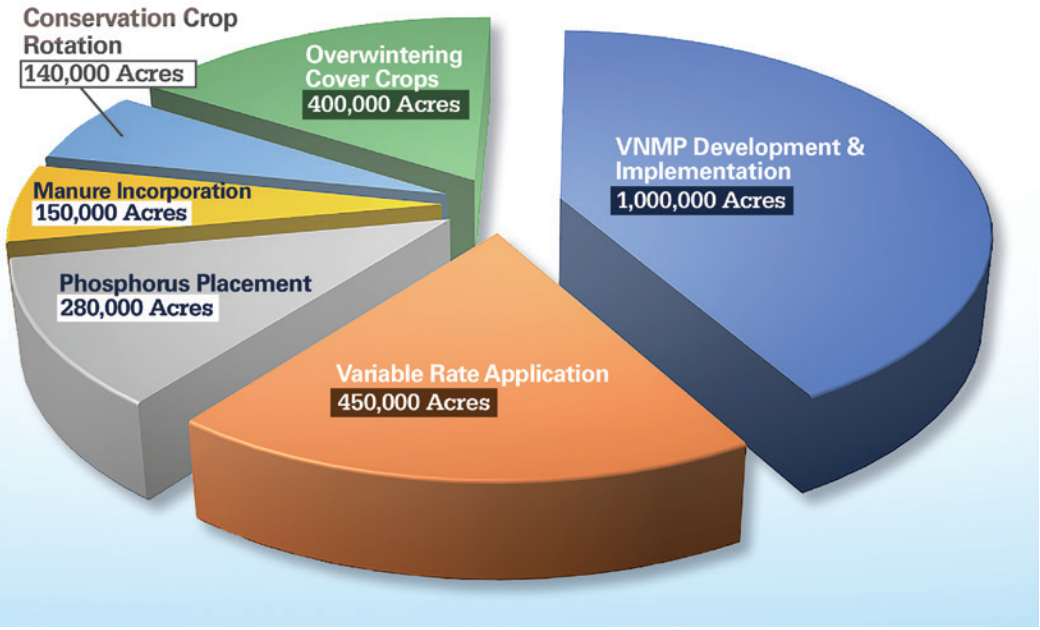
ODA developed BMP guidelines and implementation requirements in consultation with SWCD staff to ensure practice benefits were achieved while minimizing hurdles to program participation. The BMP guidelines were reviewed with the Ohio Agricultural Conservation Initiative (OACI), a collaboration of agricultural, environmental and research stakeholders. Through this review process, ODA received comments and further edited practice guidelines and program incentive rates.

Program Interest

With other partners, ODA held a series of eight informational meetings throughout February 2020 across the 14-county targeted area. The interest was remarkable, with 2,500 producers attending. SWCDs received about 2,000 applications, including nearly 1.2 million acres of cropland and approximately $180 million in requested funding. Due to the COVID-19 pandemic and funding limitations, ODA reduced the program from four years to one year, with two additional years contingent on future funding.

ODA has developed goals for the revised one-year program. ODA's annual goal for cropland enrollment in the H2Ohio program is 1 million acres with a total funding request for 2021 BMPs of $42 million. ODA's annual goals for BMPs are included in the chart below. ODA also hopes to install 600 Drainage Water Management Structures with current H2Ohio funding.

H2Ohio Cropland Practice Goals



Timeline and Future

Science and data leave no doubt that the efforts to improve water quality will take many years. ODA has worked diligently and involved an extensive range of stakeholders to produce a fully developed plan that will meet the goals of the H2Ohio Initiative and ensure a long-term solution to water quality challenges in Ohio. ODA is partnering with OACI to develop and implement a certification program that will be linked to H2Ohio. This certification program is being developed by OACI with input from a broad range of constituent groups and will be reviewed by ODA prior to implementation. Our intent is to integrate this approved certification program into future H2Ohio agreements.

To reach the projected phosphorus reduction goals for the Western Lake Erie Basin, ODA will need additional funding to maintain program delivery across the Maumee River Watershed beyond 2021. As part of the application process, producers were asked to apply for up to three years of funding, with funding for 2022 and 2023 practices contingent on future funding of the program. Based on existing applications, an estimated $45 million to fund crop year 2022 practices and $45 million to fund crop year 2023 practices would be needed.

Due to the long-term nature of this endeavor, additional funding is essential. ODA is currently exploring other funding sources to help satisfy program demand. Additional funding from the Ohio General Assembly would allow ODA to help expand the project area to the entire Western Lake Erie Basin and beyond. To reach the phosphorus reduction goals for Western Lake Erie Basin, ODA will need additional funding for the remaining program years.

Ohio Department of Natural Resources

Providing Clean and Safe Water to Ohio

Wetland Creation, Restoration, and Enhancement

Wetlands naturally improve water quality by trapping, filtering, or removing excess nutrients and other pollutants in surface water on a long-term basis. Wetland and flood plain restoration also can help mitigate high flow events in rivers or streams to minimize property damage and pollution caused by downstream erosion and flooding.

Not only are wetlands an effective management practice for reducing nutrients in surface water, research shows they are also a cost effective solution. At the same time, wetlands are among the most productive ecosystems from a wildlife habitat perspective. Because of this, wetlands provide priceless recreational opportunities for birders, anglers, waterfowl hunters, and boaters, as well as critical habitat for uniquely adapted plant and animal species.

By the Numbers

$3.3 Million
allocated to establish an independent project monitoring program

26
wetland projects in contract

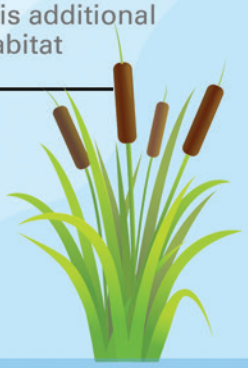
90
number of Ohio threatened or endangered species dependent on wetlands; many will benefit from this additional habitat

60,000
acres of watershed filtered by wetland projects

3,535
wetland acres to be created, restored, or enhanced

12
nonprofit conservation partners engaged

$28.9 Million
to support wetland project implementation



ODNR's H2Ohio Program Structure

The ODNR team, which includes staff from a variety of divisions with different expertise, collectively identified high-impact wetland creation, restoration, and enhancement project opportunities. The projects—which range from constructing inland, flow-through wetlands to reconnecting diked coastal marshes to Lake Erie—are focused geographically on the Maumee River and Western Lake Erie Basin watersheds as well as several priority inland lakes that have experienced increased frequency and intensity of HABs in recent years.

The highest priority H2Ohio wetland projects are 1) located in the Maumee River and Western Lake Erie Basin watersheds that contribute high levels of nutrient runoff, 2) situated to filter the drainage from a large area of agricultural landscape, 3) sized to have a wetland pool area that is efficient, relative to the contributing watershed, and 4) offer intangible benefits, such as an ease of design-build execution or the assurance of long-term support from project partners.

ODNR's current H2Ohio projects rely on a close partnership with an experienced nonprofit or local government conservation partner. Working side by side with H2Ohio program staff, these partners are developing a customized scope of work and timeline and managing environmental permitting, contracting, and implementing progress.

Budget

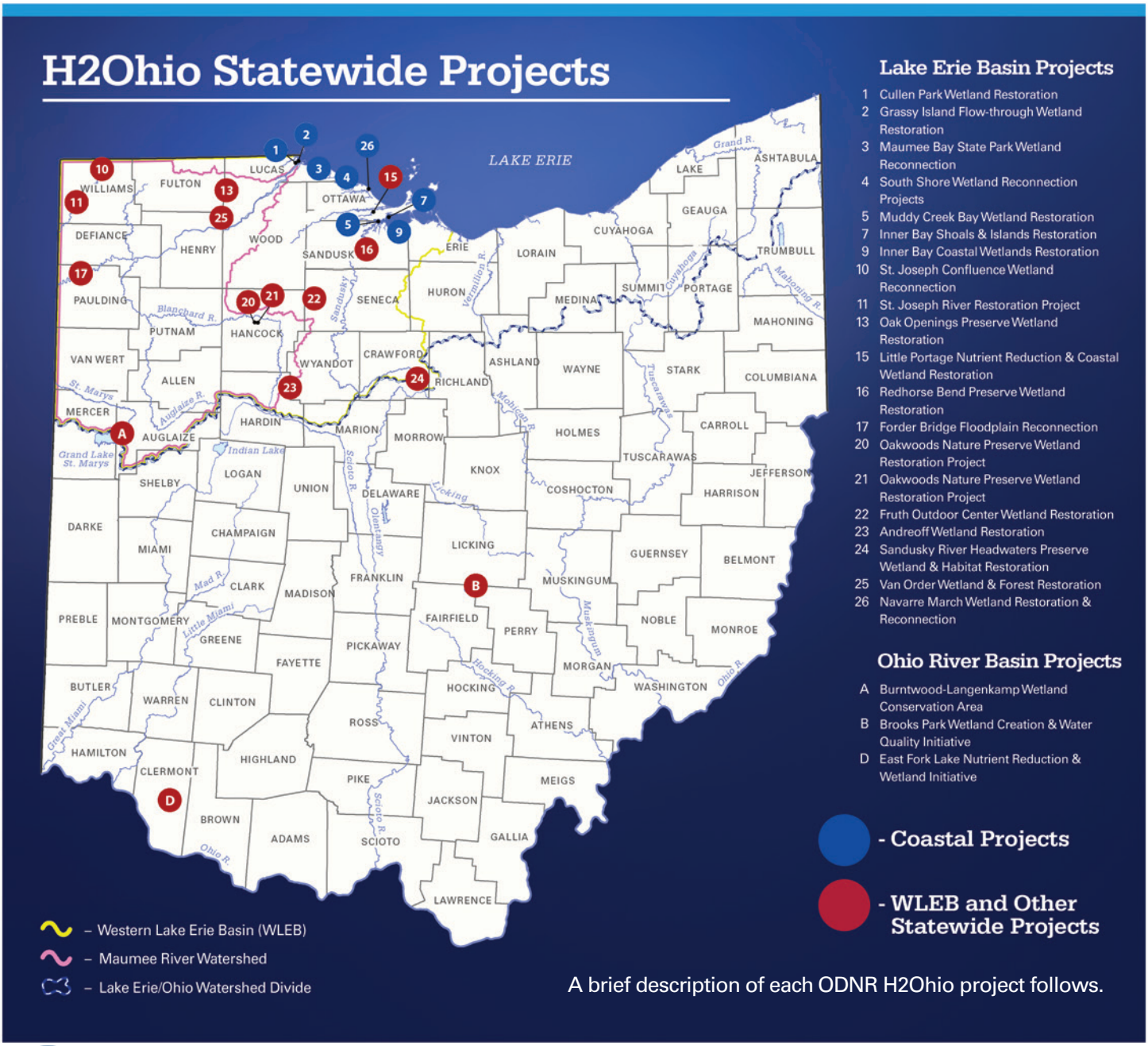
ODNR was allocated $46.2 million in House Bill 166 for fiscal year 2020 to develop a wetland-focused program that reduces surface water nutrient loading. By late March 2020, ODNR had executed grant award agreements for nearly $29 million in project work and obligated approximately $4 million in project monitoring and management expenses. ODNR paused funding new projects and has held the remaining balance in reserve to support all of the H2Ohio commitments.

Current H2Ohio Projects

ODNR has 26 wetland projects in progress representing a wide variety of wetland sizes and types, including conversion of a former drinking water reservoir into a 3 acre wetland treatment train, and reconnecting a nearly 800-acre diked coastal wetland complex to Lake Erie and nearby tributary streams.

ODNR broke ground on its first wetland project, Fruth Outdoor Center Wetland in Seneca County, in June of 2020.

All approved H2Ohio projects are assigned a number for tracking purposes. For one reason or another, a project might not move forward. When that happens, the number is temporarily retired until another project is approved and the number is reassigned.



Lake Erie Basin Projects

1. **Cullen Park Wetland Restoration**
Lucas County | Maumee River Watershed | Coastal
Project size: 140 Acres
Partners: Toledo-Lucas County Port Authority & City of Toledo

2. **Grassy Island Flow-through Wetland Restoration**
Lucas County | Maumee River Watershed | Coastal
Project size: 100 Acres
Partners: Toledo-Lucas County Port Authority & City of Toledo

3. **Maumee Bay State Park Wetland Reconnection**
Lucas County | Lake Erie Watershed | Coastal
Project size: 137 Acres
Partners: The Nature Conservancy

4A. **Ottawa National Wildlife Refuge Wetland Reconnection Projects**
Lucas County | Crane Creek Estuary | Coastal
Project size: 578 Acres
Partner: Ottawa Soil & Water Conservation District

4B. **Magee Marsh Turtle Creek Bay Wetland Reconnection**
Ottawa County | Turtle Creek Watershed | Coastal
Project size: 173 Acres
Partner: Erie Soil & Water Conservation District

4D. **Bohling Marsh Wetland Reconnection**
Ottawa County | La Carpe Creek Watershed | Coastal
Project size: 55 Acres
Partner: Ottawa Soil & Water Conservation District

4E. **Darby Refuge Wetland Reconnection**
Ottawa County | La Carpe Creek Watershed | Coastal
Project size: 352 Acres
Partner: Ottawa Soil & Water Conservation District

5. **Muddy Creek Bay Wetland Restoration**
Sandusky County | Sandusky Bay Watershed | Coastal
Project size: 100 Acres
Partners: The Nature Conservancy

7. **Inner Bay Shoals & Islands Restoration**
Sandusky County | Sandusky Bay Watershed | Coastal
Project size: 400 Acres
Partners: The Nature Conservancy

9. **Inner Bay Coastal Wetlands Restoration**
Sandusky County | Sandusky Bay Watershed | Coastal
Project size: 65 Acres
Partners: The Nature Conservancy

10. **St. Joseph Confluence Wetland Reconnection**
Williams County | Maumee River Watershed | Inland WLEB
Project size: 140 Acres
Partners: Black Swamp Conservancy

11. **St. Joseph River Restoration Project**
Williams County | Maumee River Watershed | Inland WLEB
Project size: 94 Acres
Partner: Black Swamp Conservancy

13. **Oak Openings Preserve Wetland Restoration**
Lucas County | Maumee River Watershed | Inland WLEB
Project size: 48 Acres
Partners: Metroparks Toledo

15. **Little Portage Nutrient Reduction & Coastal Wetland Restoration**
Ottawa County | Portage River Watershed | Inland WLEB
Project size: 98 Acres
Partner: Ducks Unlimited

16. **Redhorse Bend Preserve Wetland Restoration**
Sandusky County | Sandusky River Watershed | Inland WLEB
Project size: 55 Acres
Partners: Black Swamp Conservancy

17. **Forder Bridge Floodplain Reconnection**
Paulding County | Maumee River Watershed | Inland WLEB
Project size: 54 Acres
Partners: Black Swamp Conservancy

20. **Oakwoods Nature Preserve Wetland Restoration Project**
Hancock County | Blanchard River Watershed | Inland WLEB
Project size: 77 Acres
Partners: Hancock Park District

21. **Oakwoods Nature Preserve Wetland Restoration Project**
Hancock County | Blanchard River Watershed | Inland WLEB
Project size: 65 Acres
Partners: Hancock Park District

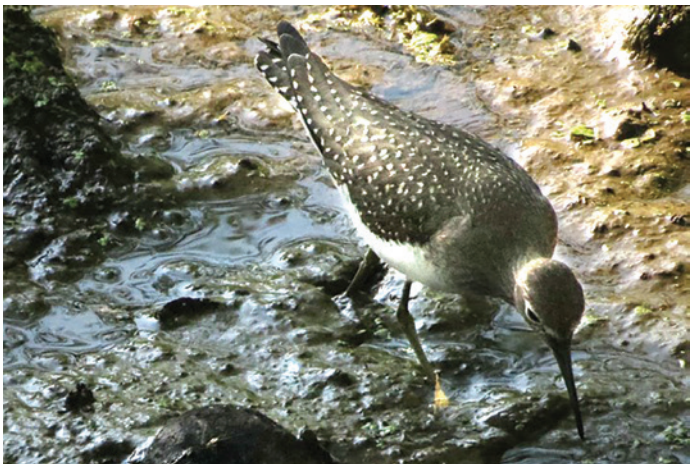
22. **Fruth Outdoor Center Wetland Restoration**
Seneca County | Sandusky River Watershed | Inland WLEB
Project size: 18 Acres
Partners: Seneca County Parks

23. **Andreoff Wetland Restoration**
Wyandot County | Outlet of the Blanchard River Watershed | Inland WLEB
Project size: 278 Acres
Partner: Ducks Unlimited

24. **Sandusky River Headwaters Preserve Wetland & Habitat Restoration**
Crawford County | Sandusky River Watershed | Inland WLEB
Project size: 38 Acres
Partners: Crawford Park District

25. **Van Order Wetland & Forest Restoration**
Henry County | Maumee River Watershed | Inland WLEB
Project size: 31 Acres
Partner: ODNR Division of Forestry

26. **Navarre Marsh Wetland Restoration & Reconnection**
Ottawa County | Toussaint River Watershed | Coastal
Project size: 628 Acres
Partner: Ducks Unlimited, U.S. Fish & Wildlife Service



Ohio River Basin Projects

A. **Burntwood-Langenkamp Wetland Conservation Area**
Mercer County | Coldwater Creek Watershed | Inland Western Ohio
Project size: 90 Acres
Partner: Lake Facilities Authority

B. **Brooks Park Wetland Creation & Water Quality Initiative**
Fairfield County | Licking River Watershed | Inland Eastern Ohio
Project size: 3 Acres
Partner: ODNR Division of Parks & Watercraft

D. **East Fork Lake Nutrient Reduction & Wetland Initiative**
Clermont County | East Fork Little Miami River Watershed | Inland Southwestern Ohio
Project size: 3 Acres
Partner: Clermont Soil & Water Conservation District, Village of Williamsburg

Ohio Environmental Protection Agency

Providing Clean and Safe Water to Ohio

Ohio EPA has many responsibilities for ensuring clean and safe water for the people of Ohio. The agency develops and supports innovative, practical, and effective solutions for clean streams and lakes as well as drinking water. Ohio EPA received $8.675 million in H2Ohio spending authority for fiscal year 2020 in HB 166 as part of the biennial budget passed by the General Assembly.

Ohio EPA's H2Ohio approach has been to concentrate on five focus areas which will improve water quality, protect public health, and provide positive change to the lives of Ohioans. These five focus areas are: improving Ohio's water and wastewater infrastructure, replacing failed home sewage treatment systems, reducing lead exposure in daycare centers, building a stronger stream monitoring network, and researching promising technologies for water quality improvements. The following sections summarize the achievements to date, which set a strong foundation for continued improvements in Ohio's water quality.

By the Numbers

$4,210,000
For seven critical water and sewer projects

four drinking water projects in Columbiana, Coshocton, Noble, and Pike counties serving more than 4,000 people in rural Ohio.

three wastewater projects in Miami, Meigs, and Williams counties serving 600 people and 250 homes.

180
Home sewage treatment systems to be replaced

185 lead service lines to be replaced at daycares totalling $725,000

Increased Monitoring and Data Collection
installing an additional 20 rain gages to improve weather forecasting and rainfall estimates in northwest Ohio.

$1,750,000
Amount to go to seven local health districts for replacement of household sewage treatment systems

$23 Million In leveraged local, state, and federal funds

Improved Infrastructure

All Ohioans should have clean and safe drinking water. Still, many parts of Ohio lack some of the basic necessities of proper wastewater treatment and good, clean drinking water. This challenge is particularly difficult for communities that are economically disadvantaged and cannot afford to take on significant debt associated with conventional infrastructure loan programs.

Ohio EPA directed $4.21 million in H2Ohio funds toward this focus area. Grants ranging from $500,000 to $1 million were awarded to seven entities throughout Ohio. With these funds, projects will be constructed which will: 1) extend water and sewer lines to pick up households that desperately needed to be served, 2) provide capacity for additional growth and economic development, and 3) consolidate utilities in neighboring communities for greater efficiency.

Four drinking water projects will be constructed, serving an estimated 4,000 people. $2.71 million in H2Ohio funds were awarded to these projects, which have a total construction cost of about $15 million. This illustrates the leveraging capability of H2Ohio dollars – when combined with other sources, H2Ohio funds can be the difference for communities to proceed toward implementation.

Three wastewater projects will be constructed, serving an estimated 670 people. A total of $1.5 million in H2Ohio funds were awarded to these projects which have a construction cost of about $10 million. In addition to providing desperately needed services to Ohioans, these infrastructure projects have the extra benefit of promoting economic activity through construction-related jobs. Eight direct construction-related jobs are created for each $1 million invested, according to some sources. Using this multiplier, the water and wastewater infrastructure projects in which H2Ohio funds were contributed account for the creation of approximately 200 jobs.

Grantee	Project Name	H2Ohio Award	Total Project Cost
City of Coshocton	West Lafayette Waterline Extension	$500,000	$7,572,784
Village of New Waterford	Crestview School Waterline Extension	$500,000	$2,400,000
Pike Water, Inc.	Highland Pike Waterline Extension	$1,000,000	$1,600,000
Noble Co. Water Authority	Waterline Extension & Interconnection	$710,000	$3,400,000
Village of Pomeroy	S.R. 833 Sewer Extension Phase 2	$500,000	$3,696,300
Williams County	Kunkle Sanitary Sewer & WWTP Project	$500,000	$3,100,000
Village of West Milton	Ludlow Falls Sanitary Sewer System	$500,000	$3,096,000
Total		**$4,210,000**	**$24,865,084**

Home Sewage

Ohio has nearly one million homes served by household sewage treatment systems (HSTS). When working properly, these can be a viable form of sewage treatment in rural areas that that lacked centralized sanitary sewers. However, when malfunctioning, HSTS can contribute to poor water quality and threaten public health. Portions of northwest Ohio have been identified for repair and replacement of failing HSTS that contribute to poor water quality in Lake Erie. H2Ohio funds will be an important tool for this initiative, which is targeted toward poorer households.

Ohio EPA has awarded a total of $1.75 million to seven health districts for this focus area. The health departments of Erie, Ottawa, Paulding, Putnam, Sandusky, Williams, and Wood counties received $250,000 to improve HSTS. These counties were chosen because of the prevalence of HSTS and the local health districts' proven ability to work with homeowners to correct problems. Funds will be directed to disadvantaged homeowners, and depending on the household income and the number of residents, homeowners may qualify for grants of 50% to 100% of the total costs for HSTS repair or replacement. These funds will be used in conjunction with an additional $1.05 million available from the state's Water Pollution Control Loan Fund to get even more HSTS work done in these counties. Together, these funds will repair or replace an estimated 180 HSTS, which will improve water quality and protect public health.

Day Care Testing and Remediation

In recent years, there has been a growing concern about the effects of lead in drinking water, particularly for populations that are considered the highest risk – children and pregnant women. Ohio EPA has been working diligently with public water systems to reduce this risk through the mapping and elimination of lead service lines to households. Recently the Ohio Department of Health was awarded a federal grant to test day care centers for the presence of lead. The success of that voluntary testing and identifying unsafe sources of lead is tied to being able to remediate those sources of lead once found. H2Ohio funds will play a key role in this initiative by remediating lead sources at home day care centers, protecting a vulnerable sector of the population.

A total of $1.225 million in H2Ohio funds have been reserved for the day care testing and remediation initiative. Federal grant funds will be used to conduct the testing, and H2Ohio funds will be used for remediation: $725,000 for the replacement of lead service lines in day cares, and $500,000 for fixture replacements inside day care facilities. Ohio has thousands of daycare centers statewide; this pilot project will focus on urban areas (Cleveland and Cincinnati) that have high numbers of day care centers and children, and a higher prevalence of lead service lines. It is estimated that about 185 lead service lines can be replaced at day care centers with the $725,000 that has been awarded. Using these H2Ohio funds, the drinking water at these day care centers can be improved for thousands of children.

Increased Monitoring

In the battle to fight harmful algal blooms (HABs) and improve water quality, solid data is necessary to make sound decisions. While Ohio has some of the best water quality data in the country, there are important gaps, which need to be filled. Understanding how rainfall affects in-stream nutrients is critical to devising strategies to prevent HABs. To this end, Ohio EPA has directed $568,500 in H2Ohio funds to strategically fill the data gaps. To fill a gap in the Doppler weather radar network, the agency bought 20 new rain gages for $136,000 to increase monitoring. These gages are critical for improving flood forecasting and modeling of nutrient runoff.

An additional $432,500 has been invested in water quality monitor-ing gages at three Ohio River tributaries—the Little Miami, East Fork Little Miami and Hocking Rivers. These new gages will add nearly 3,000 square miles of watershed coverage to Ohio EPA's Nutrient Mass Balance Study. With the addi-tion of these watersheds, the coverage of the Mass Balance Study will be more than 72% of Ohio's watersheds.

Technology Vetting

As Ohio and other parts of the country struggle with HABs, many technologies are being developed to help prevent or treat future blooms. Many of these technologies are presented to the state for funding consideration either as pilots or full-scale projects. Because these technologies are innovative, proprietary, and span multiple scientific disciplines, state agencies alone are not best positioned to determine which technologies have the greatest chance for success in Ohio. For this reason, Ohio EPA, with support from ODA and ODNR, is developing a process for a thorough and impartial investigation of the most promising technologies.

Using H2Ohio funds, Ohio EPA will retain a scientific consulting firm to study and validate a select group of technologies. The goal of this initiative is to focus on technologies that reduce nutrient loading to streams and lakes, reduce the toxicity of algal blooms, improve nutrient removal from wastewater, or recover nutrients from manure. Beginning in the fourth quarter of 2020, Ohio EPA will solicit proposals for these promising technologies, and the most promising 10 technologies will advance to the scientific consulting firm for in-depth study.

Ohio EPA's approach, outlined above, is strategic in directing limited H2Ohio resources to projects that have the biggest impact.

Conclusion

Ohio's water problems took many years to develop, and it will take time to implement solutions. So, it is important to remain realistic about the state's progress. After the first year, the H2Ohio Initiative has invested $66,740,000 throughout Ohio on nutrient reduction, wetlands restoration, infrastructure construction, monitoring, and water technology.

Agency	Appropriation	Expended	Encumbered	Remaining at Year End
Department of Agriculture	$30,300,000	$2,572,178	$26,900,374	$827,448
Environmental Protection	$8,675,000	$314,925	$5,318,500	$3,041,575
Department of Natural Resources	$46,200,000	$8,966,512	$22,842,428	$14,391,060
Total	$85,175,000	$11,853,614	$55,061,302	$18,260,084

H2Ohio has focused considerable attention on the HAB problem in Lake Erie. Based on scientific research, the agricultural best management practices that H2Ohio is implementing will reduce nutrient runoff. If producers significantly increase the use of BMPs, over time, phosphorus loading into the Maumee River Watershed will be reduced along with the recurrence of algal blooms in Lake Erie. In combination with additional wetlands restoration and efforts to reduce other contributions of phosphorus through HSTS repairs, H2Ohio is leading Ohio towards a reduction of phosphorus in Lake Erie. Further, the contributions towards water infrastructure help assure safe and clean water quality for thousands of Ohioans.

To reach the phosphorus reduction goals for Western Lake Erie Basin by 2025, ODA will need additional funding for the remaining program years. The high interest from producers showed that there is interest from farmers in imple-menting solutions to achieve the phosphorus targets. Though the nutrient runoff into Lake Erie receives a lot of public attention, nutrient runoff and algal blooms occur across Ohio, and to provide clean and safe water throughout the state, ODA will need to expand the ODA H2Ohio Program project area.

The ODNR H2Ohio Program is already identifying new opportunities for implementing strategic nutrient reduction wetlands to improve Ohio's water quality. ODNR is building momentum for a collaborative approach to conservation that will deliver wetlands benefits over the long term. The 26 nutrient reduction wetlands that constitute this first phase of ODNR's H2Ohio Program are pioneers in a new extension of ODNR's long held and steadfast mission to ensure a balance between the wise use and protection of Ohio's natural resources for the benefit of all.

Ohio EPA's five focus areas for the initial year of the H2Ohio initiative were strategically chosen to help improve water quality, protect public health, and make a positive impact of the lives of Ohioans. These focus areas provide a roadmap for continued progress toward the H2Ohio objectives. Ohio EPA envisions continuing to focus in on infrastructure and home sewage in the future because these projects solve immediate problems that directly impact the lives of Ohioans, particularly those that are economically disadvantaged. Continued work on reducing lead, increasing stream monitoring, and pilot testing of nutrient removal technologies also are important to further the progress made with the initial year of the H2Ohio initiative.

H2Ohio funds have had a meaningful impact on directly addressing Ohio's water problems, and an additional benefit is the ability to use additional funds to increase efforts to invest in clean, safe water. With limited funding overall, the H2Ohio program will continue to look for ways to leverage other funding sources to stretch dollars further. For example, Ohio EPA used its $8.675 million in H2Ohio dollars to leverage more than $23 million in other local, state, and federal funds.

Focus Area	H2Ohio Funds Used	Estimated Local, State and Federal Funds Leveraged
Improved Infrastructure	$4,210,000	$20,655,084
Home Sewage	$1,750,000	$1,050,000
Daycare Lead Remediation	$1,225,000	$1,361,000
Total	$7,185,000	$23,066,084

More specifically, Ohio EPA will be receiving a federal grant from U.S. EPA for $1.069 million that can be used on infrastructure projects that meet a specific criterion, which was met in the award to the Noble County Water Authority. That federal grant requires a 45% "local share" which can be hard to identify. By matching the federal grant with $710,000 in H2Ohio funds, this desperately needed project for a disadvantaged area can be implemented.

Another example is using H2Ohio funds for day care lead remediation. Ohio EPA and the Ohio Department of Health collaborated on a $1.361 million federal grant that was awarded early in 2020. The grant can be used for lead testing in day care centers, but not remediation. Since testing is voluntary, a source of remediation funding is critical for the overall success of the program. Thousands of Ohio children will benefit from this funding collaboration.

Within the ODNR funding, $3.1 million worth of wetland development and restoration work is being cited by Ohio EPA as the federally required match for a grant from U.S. EPA that provides project and program funding for Ohio's Nonpoint Source Program. This allows more than $3 million of local implementation projects to forego the normal 40% local match.

The H2Ohio foundation is strong. Continued investment in H2Ohio will allow the state to build upon this investment, leading to improved water quality and public health, job creation, and a sustainable economy.

The Governor and the Ohio General Assembly should be congratulated on providing the financial resources to make these necessary improvements in Ohio's water and understanding that the need for additional investment still exists.

Ohio | Department of Agriculture

H2Ohio Accomplishments for Fiscal Year 2020 **Report Addendum**

December 14, 2020

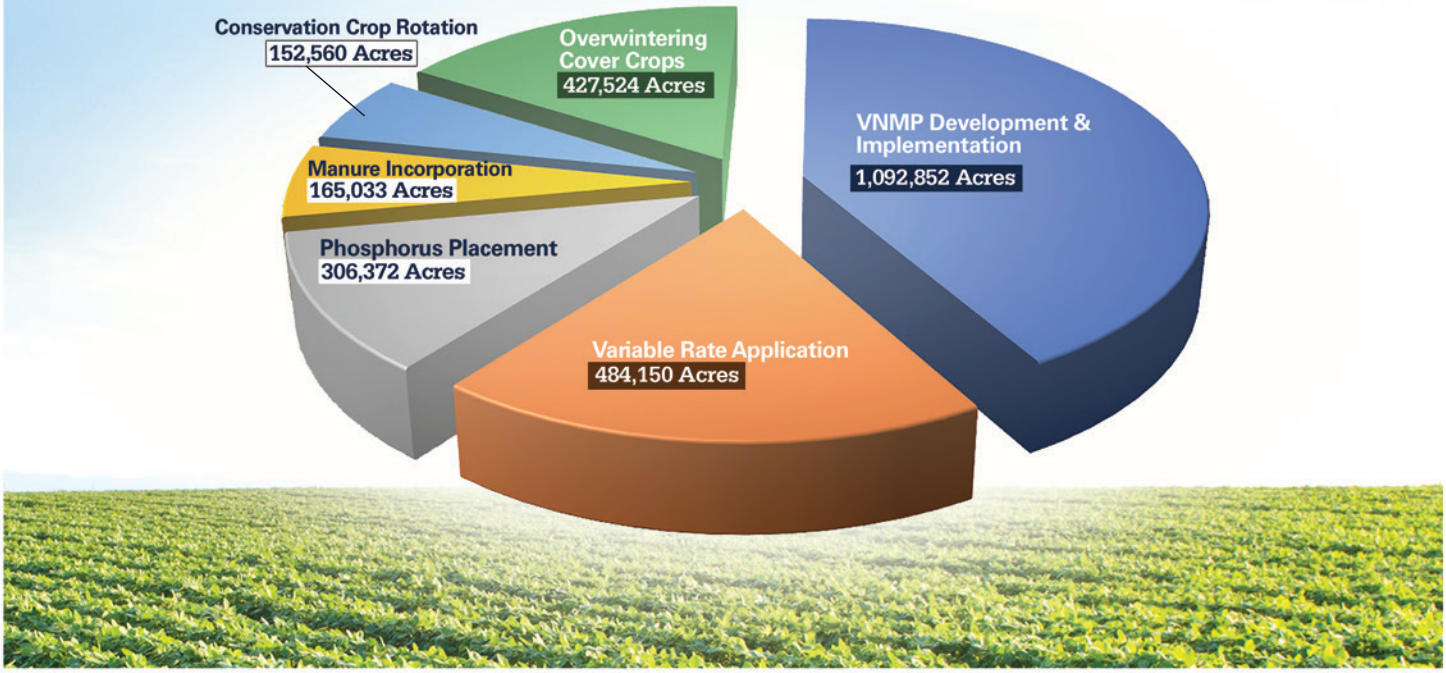
Ohio Department of Agriculture

This addendum to the H2Ohio Accomplishments for Fiscal Year 2020 Report submitted August 31, 2020, provides updated producer enrollment information and statistics current as of November 30, 2020.

H2Ohio incentive programs administered by the Ohio Department of Agriculture are currently available to producers in 14 counties in the Maumee River Watershed (the "targeted project area").

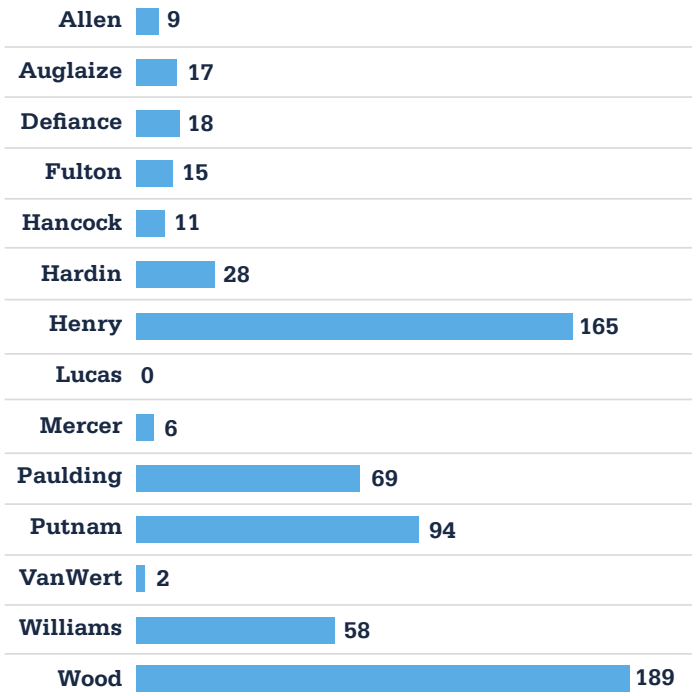
As of November 20, 2020, ODA has entered into agreements with 1815 producers, as approved by the local Soil and Water Conservation Districts (SWCDs). These agreements represent 1,092,852 acres, approximately 44% of the cropland in the targeted project area, enrolled in six Best Management Practices (BMPs): voluntary nutrient management plans (VNMPs), variable rate application, sub-surface nutrient application, manure incorporation, conservation crop rotation and overwintering cover crops.

H2Ohio Cropland Practice Enrollment Acres



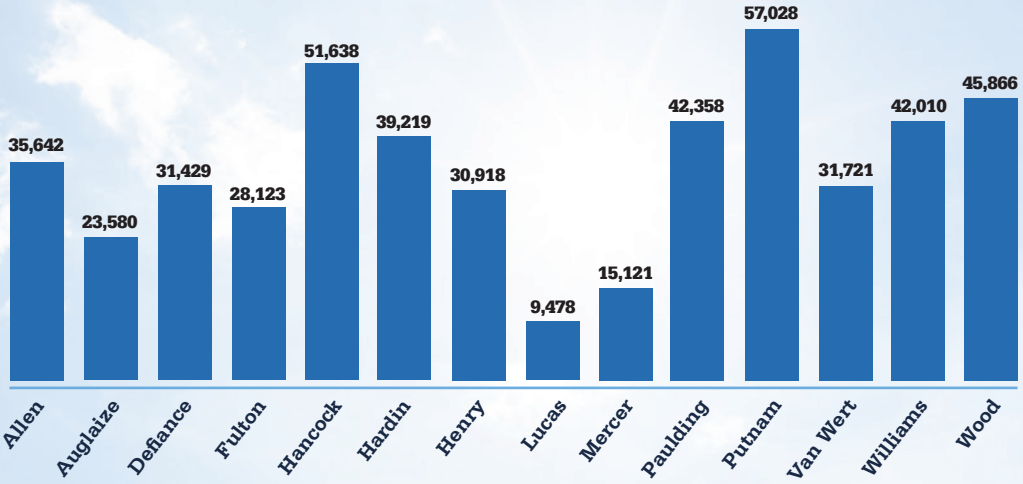
In addition to the BMPs to be implemented on cropland, producers have signed up for 681 drainage water management structures, which will be installed over the next calendar year in 13 of the 14 targeted counties, with the largest number in Wood, Henry, Putnam, Paulding and Williams. Approximately 10,000 acres of cropland will be controlled by drainage water management structures.

Drainage Water Management Structures

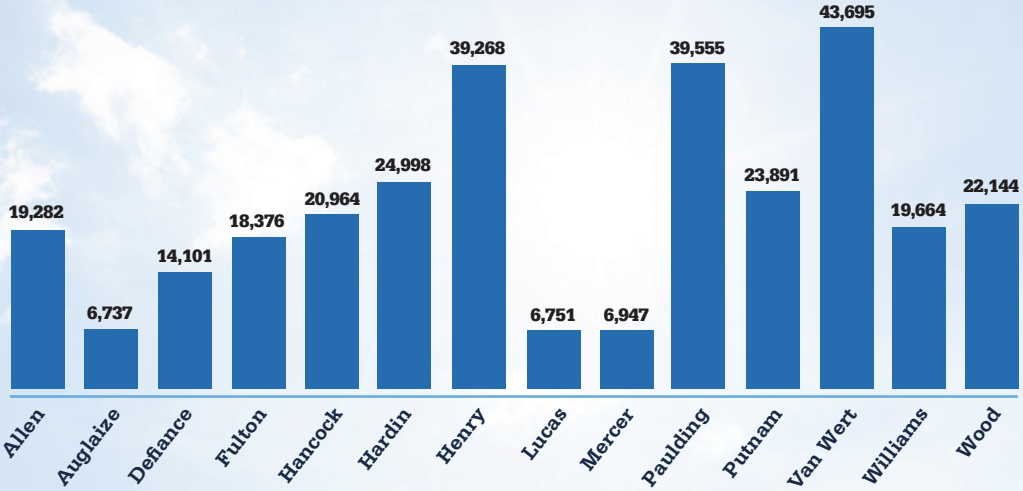


The BMPs to be implemented on cropland are spread out across the Maumee River Watershed, broken down by practice and county in the following series of graphs.

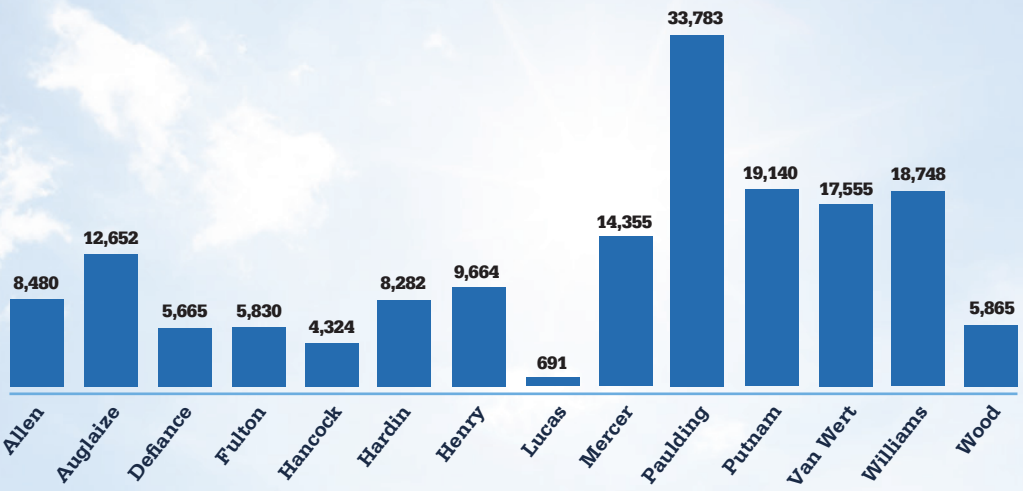
VRT Phosphorus Application



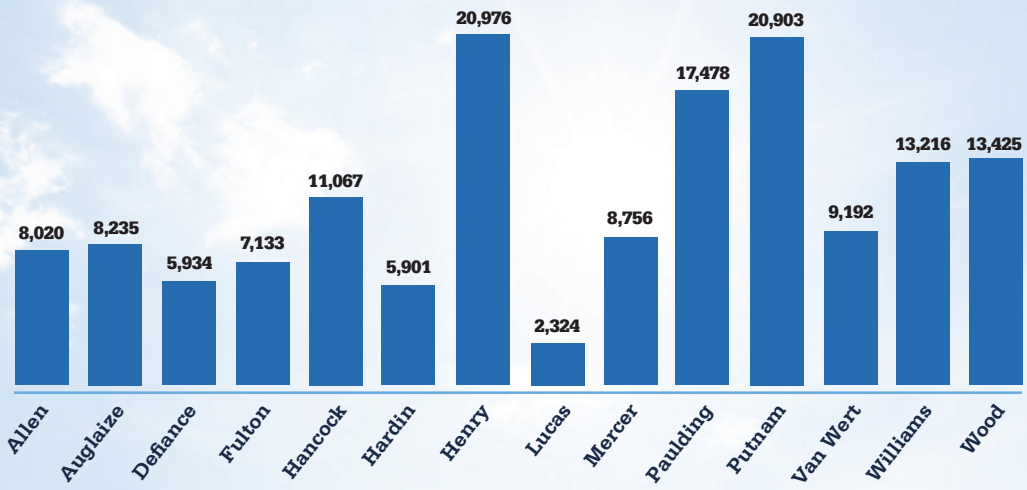
Subsurface Phosphorus Placement



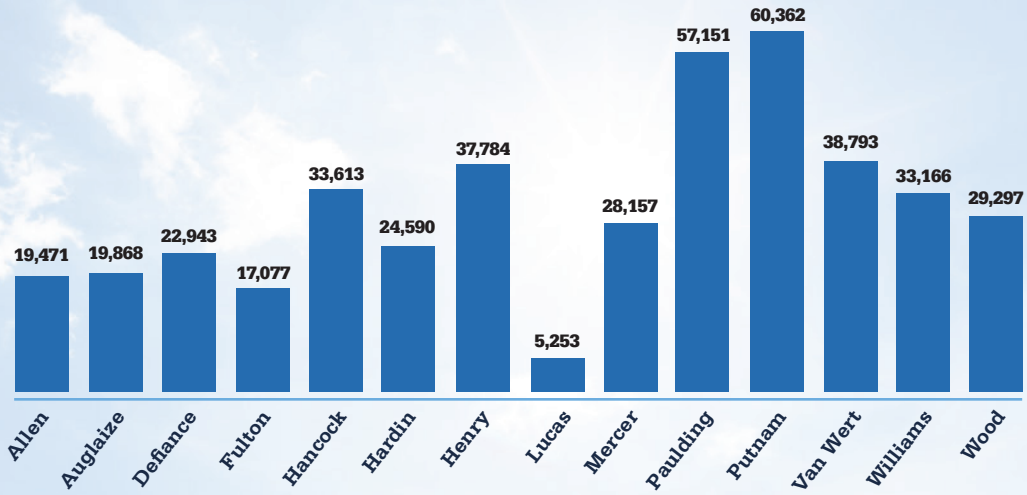
Manure Incorporation



Crop Rotation



Cover Crops



ODA saw robust participation in each of the targeted 14 counties in the Maumee River Watershed. BMP enrollment by county reflects the differences in the agricultural production practices across the region, but the widespread interest demonstrates the applicability of the H2Ohio practices over the entire targeted project area.

H2Ohio Agreements by County

Allen	92
Auglaize	119
Defiance	92
Fulton	79
Hancock	138
Hardin	86
Henry	202
Lucas	27
Mercer	134
Paulding	116
Putnam	361
VanWert	176
Williams	105
Wood	126

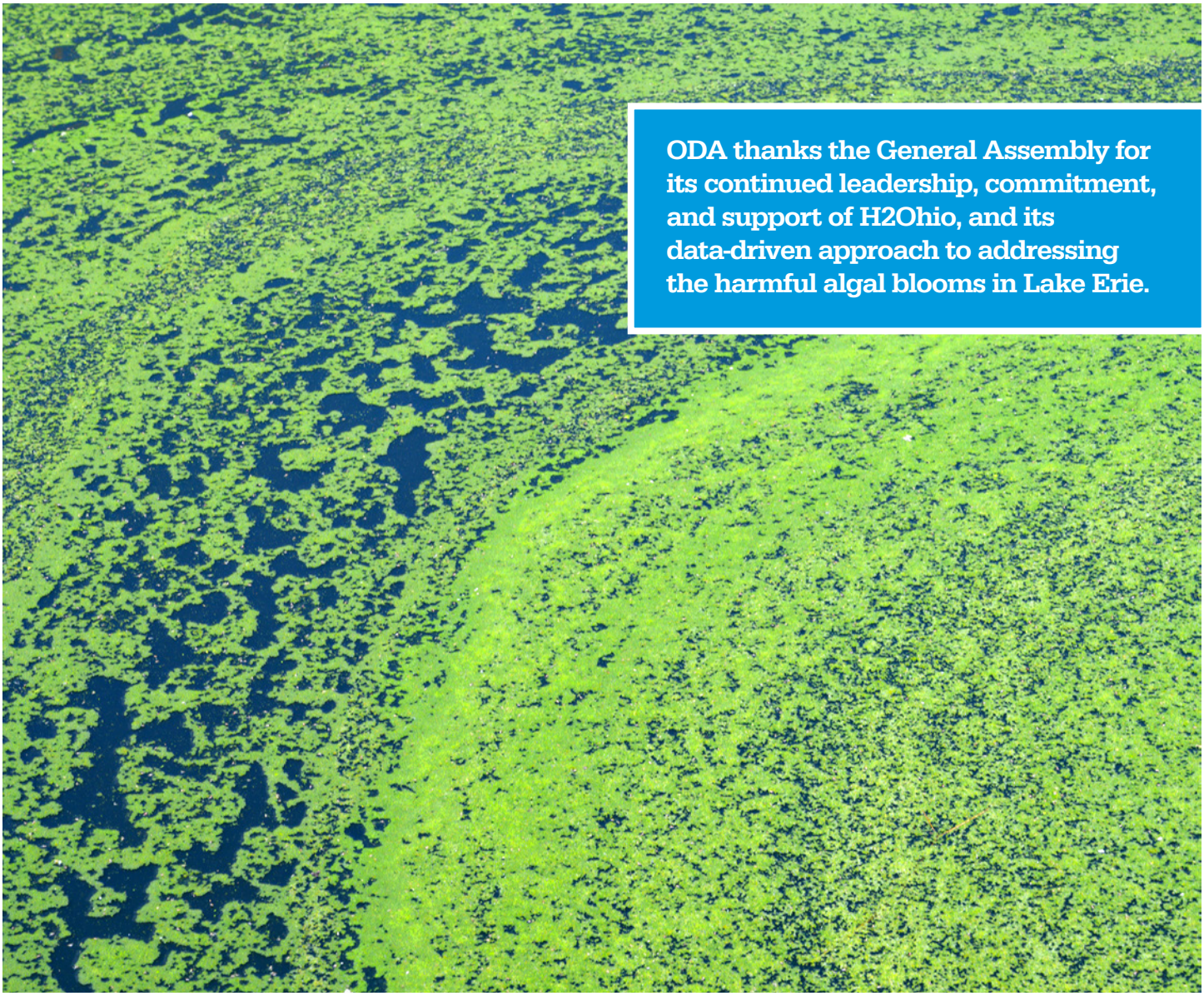
Currently, SWCDs in the project area are reviewing VNMPs and consulting with producers about implementation of H2Ohio BMPs. Once implemented, practices will be certified by the producer, and SWCD staff will confirm that program requirements have been satisfied prior to disbursement of any incentive payments.

Producers applying for H2Ohio incentives have committed to implementing BMPs for a three-year period, understanding that, as of now, ODA can only guarantee incentive payments the first year of implementation. ODA anticipates that applications and producer interest for the second and third years of the H2Ohio program in the targeted project area will match the enrollment progress reported in this addendum. Annual funding of $42,000,000 will be required to pay out incentives associated with implementing BMPs in the targeted project area.

The Office of Budget Management recently appropriated $28,000,000 which will partially fund a second year of BMPs. The remainder of year two incentive payments will be satisfied with funds from the Soil & Water Phosphorus Program (SB 299).

At this time, funding has not been secured for a third year of BMP incentives in the targeted project area. However, ODA is working to expand H2Ohio programs into the remainder of the Western Lake Erie Basin counties. To accomplish this, ODA has applied for federal funds available through the Regional Conservation Partnership Program (RCPP).

ODA has continued a close working relationship with the Ohio Agriculture Conservation Initiative (OACI). Producers enrolling in the H2Ohio program are also registering with OACI. OACI registration requirements will be included in the H2Ohio contract extensions offered to producers in 2021.



ODA thanks the General Assembly for its continued leadership, commitment, and support of H2Ohio, and its data-driven approach to addressing the harmful algal blooms in Lake Erie.

H2Ohio

H2Ohio Accomplishments for Fiscal Year 2020

MIKE DEWINE
GOVERNOR OF OHIO

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Ohio Department of Agriculture

OHIO DEPARTMENT OF NATURAL RESOURCES

Ohio Environmental Protection Agency

Ohio Lake Erie Commission