H2Ohio

PROTECTING OHIO'S WATER

WELCOME

Mike DeWine, Governor

Jon Husted, Lt. Governor

H2Ohio

Objective

To improve water quality in the Western Lake Erie Basin through implementation of strategic conservation practices

Three Areas of Focus

- Improved management of Nutrients, Erosion, and Water
- Seven practices offered in first program year

10 conservation practices with a proven track record in Ohio and beyond

Nutrient Management

1. Soil Testing & Volunteer Nutrient Management Plans
2. Variable Rate Application
3. Subsurface Fertilizer Placement
4. Manure Incorporation

Erosion Management

5. Conservation Crop Rotation
6. Cover Crops

Water Management

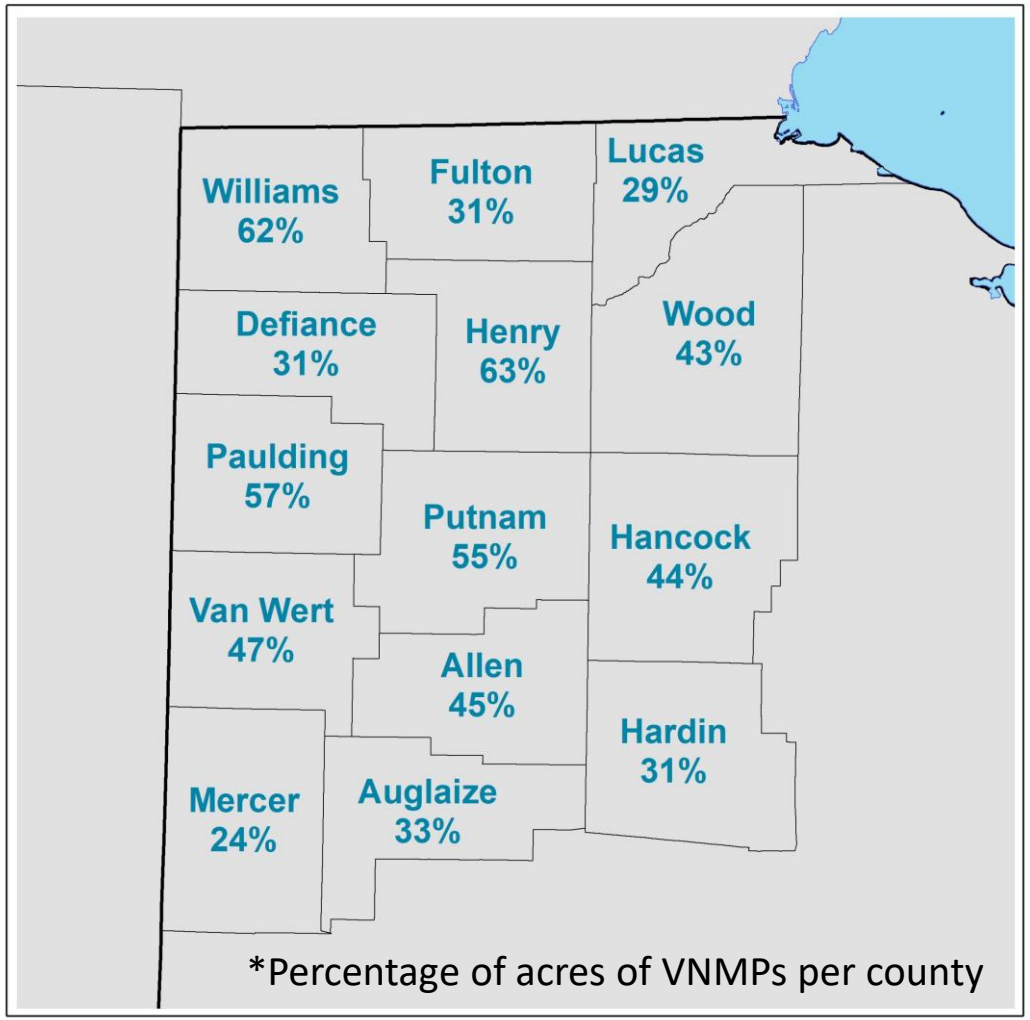
7. Drainage Water Management
8. Riparian Forest Buffers
9. Two-stage Ditch Construction
10. Headwater & Coastal Flow-through Wetlands

First 7 practices offered in first program year

Program Interest

- Engaged Farmers at 8 rollout meetings
- Nearly 2,000 applications received from WLEB producers
- Applications include nearly 1.2 million acres of Voluntary Nutrient Management Plans (VNMPs)
- Represents approximately 43% of total cropland in the 14 counties

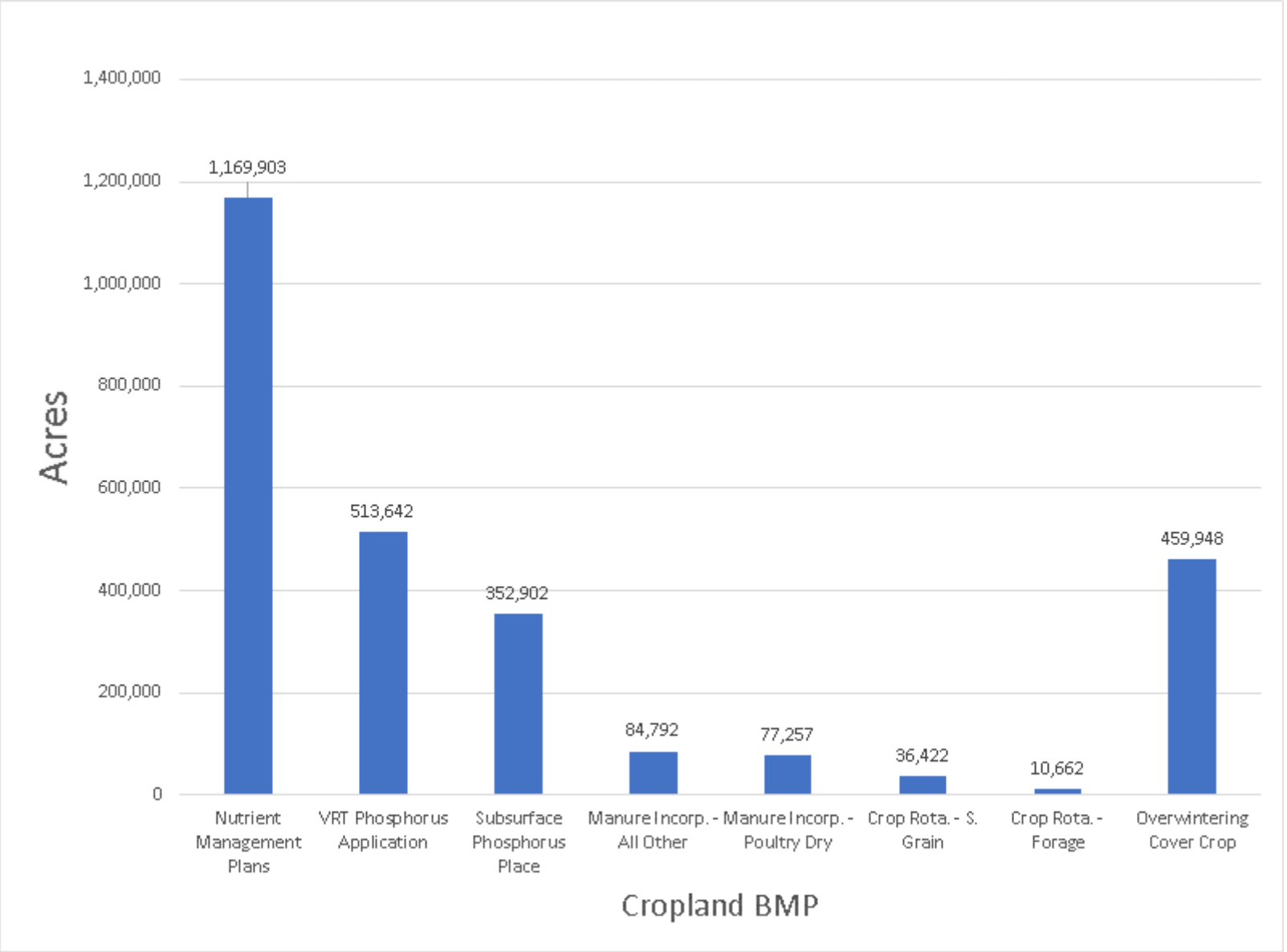
1.2 million acres of Voluntary Nutrient Management Plans



Implementation

- Revised applications must be completed by August 14
- Practices will begin fall of 2020 continue to late summer 2021 with current funding

H2Ohio Best Management Practices – First Program Year



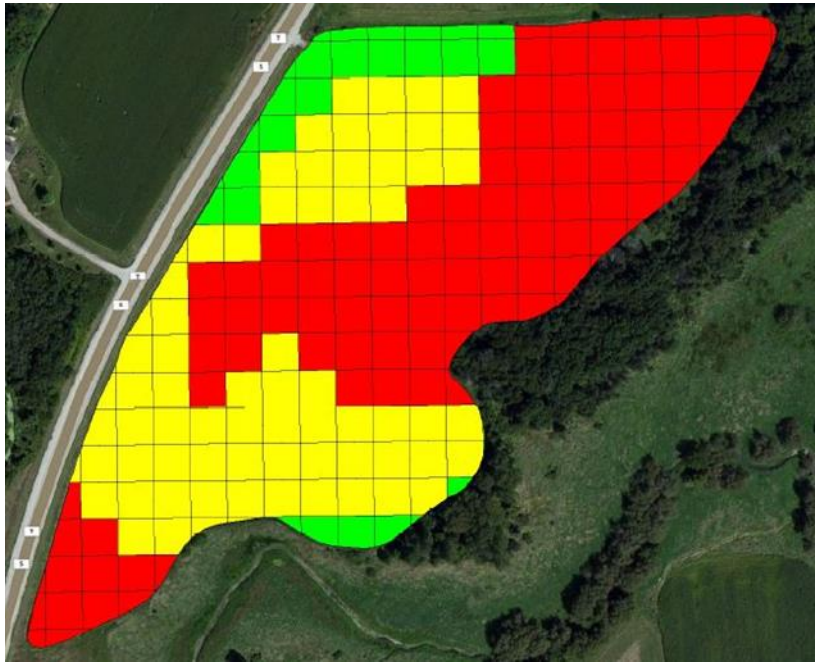
H2Ohio

Funding

- $30 million in H2Ohio funds, $20 million in SB 299 funds allocated for first program year
- Similar funding needed for ensuing years

Impact

- Potential significant phosphorous load reduction in first program year
- Practices will also result in a sediment reduction

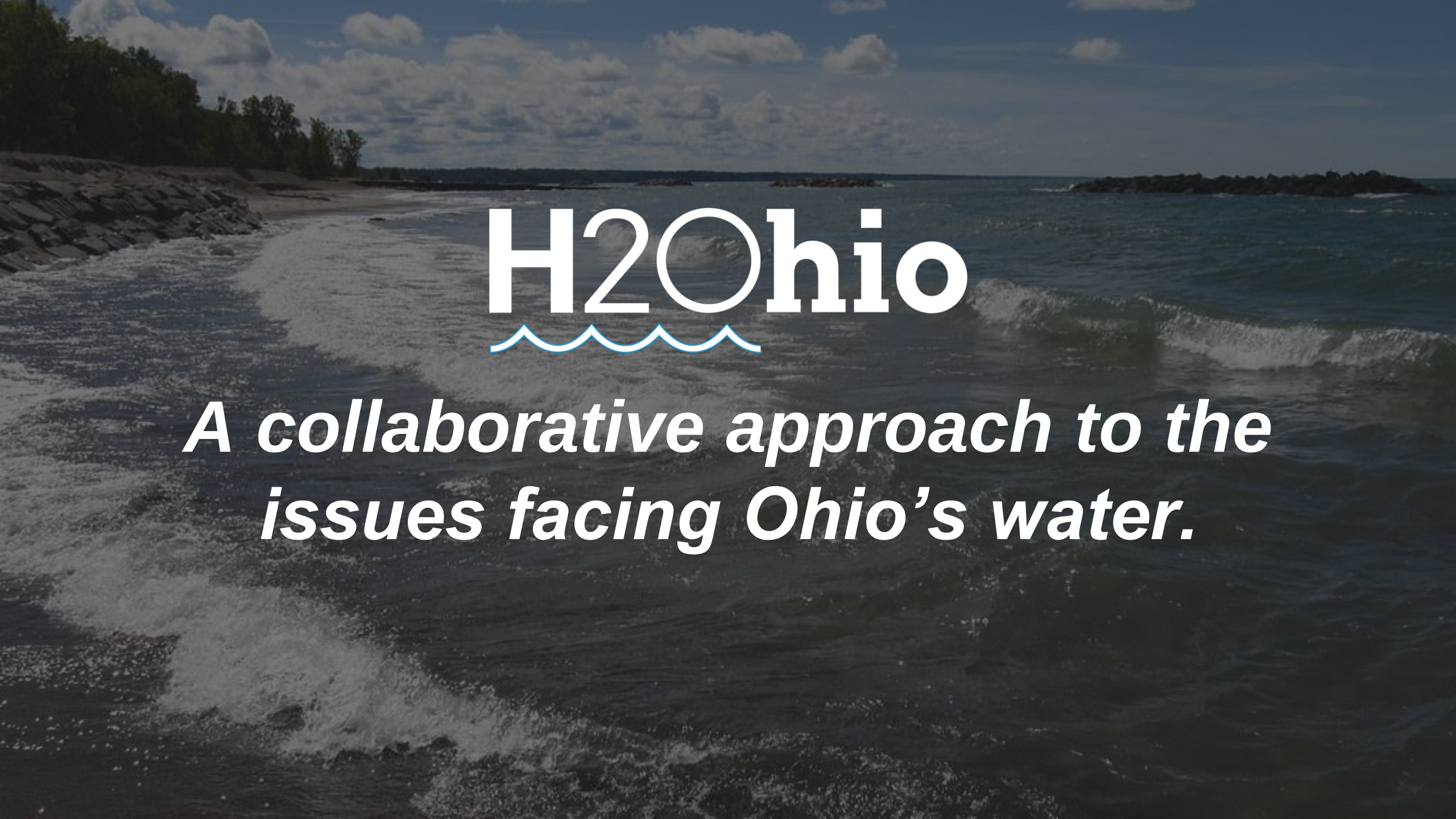


For Future Program Years

- Full funding needed for remaining program years to reach target of 40% phosphorus load reduction by 2025
- Adding additional conservation practices to will also help to reach load reduction goals
- Expanding conservation practices to the entire Western Lake Erie Basin and beyond depending on funding availability

OHIO DEPARTMENT OF NATURAL RESOURCES

June 2020


H2Ohio
A collaborative approach to the issues facing Ohio's water.


H2Ohio
Toxic Algal Bloom, Lake Erie, 2011

Algal bloom at Maumee Bay State Park beach August 14, 2019

H2Ohio

June 2020

The Importance of Wetlands

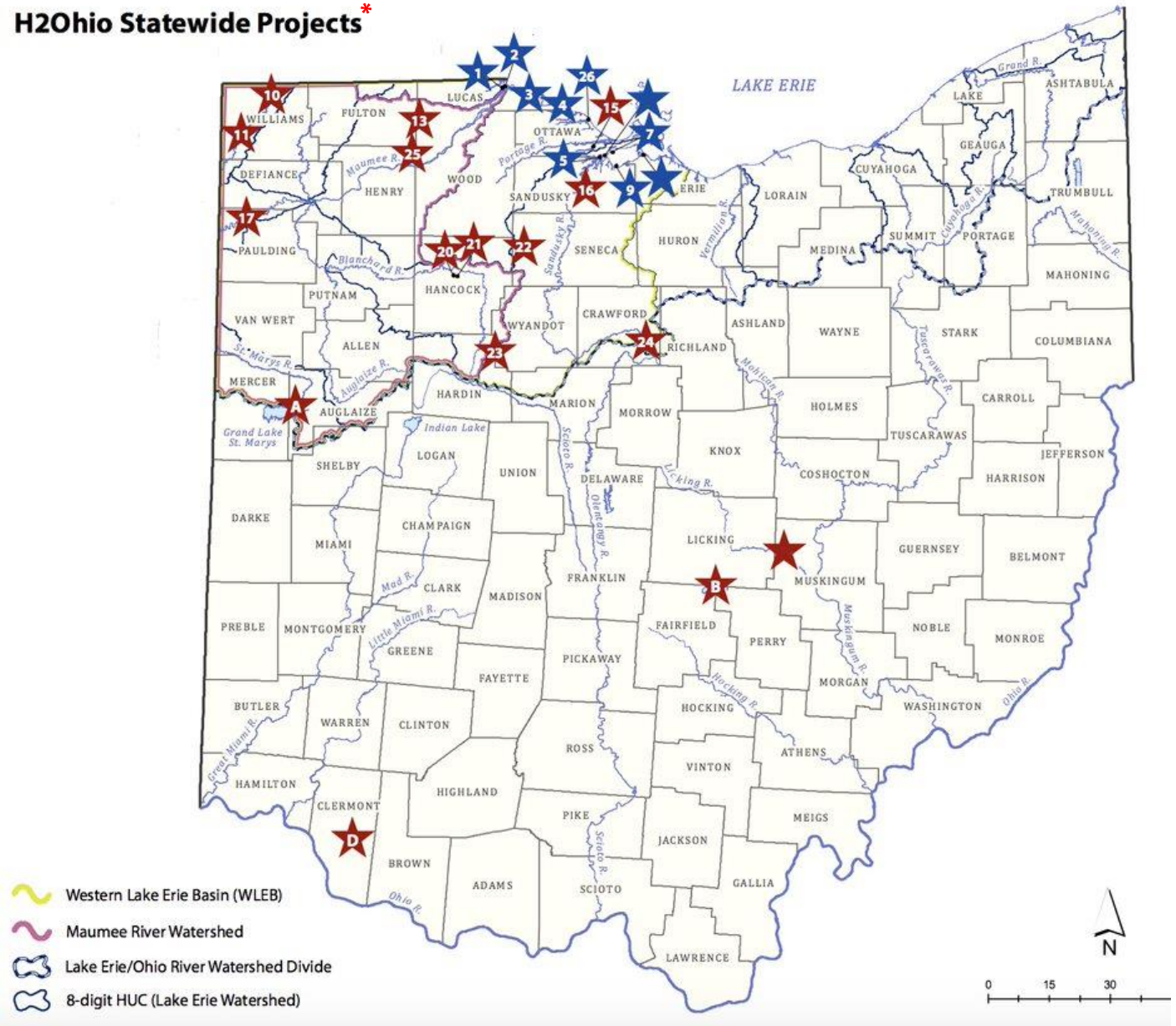
One of the most effective and cost efficient long-term solutions to reducing excess nutrients in our waterways.


How much incoming phosphorus can a wetland retain?

H2Ohio Phase One Projects

June 2020

H2Ohio Statewide Projects*



Coastal Projects

WLEB and other StatewideProjects

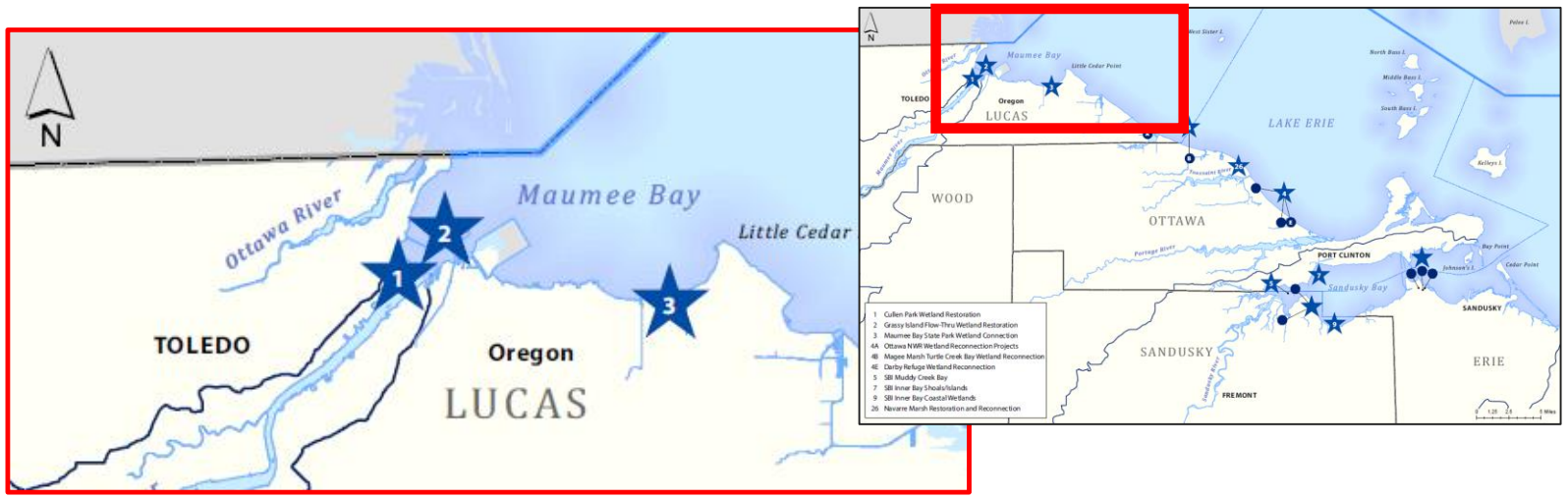
1 Cullen Park Wetland Restoration
2 Grassy Island Flow-Thru Wetland Restoration
3 Maumee Bay State Park Wetland Reconnection
4 South Shore Reconnection Project
5 SBI Muddy Creek Bay
7 SBI Inner Bay Shoals/Islands
9 SBI Inner Bay Coastal Wetlands
10 Confluence of the Maumee & St. Joseph Rivers
11 St. Joseph River Wetland Restoration
13 Oak Openings Preserve Wetland
15 Little Portage Restoration
16 Redhorse Bend Preserve Wetland Restoration
17 Forder Bridge Floodplain Reconnection
20 Oakwoods Nature Preserve West, Aurand Run
21 Oakwoods Nature Preserve East
22 Fruth Outdoor Center
23 Andreoff Wetland & Woodland Restoration
24 Sandusky River Headwaters Preserve
25 Van Order Woodland & Wetland Restoration
26 Navarre Marsh Wetland Restoration & Reconnection

A Grand Lake St. Marys State Park
B Buckeye Lake Brooks Park Wetland Creation
D Harsha Lake - Upper East Fork of the Miami Headwaters

Projects featured in this presentation are subject to modification

H2Ohio Coastal

June 2020



1. Cullen Park Flow-through Wetland restoration
Lucas County | Maumee River Watershed | Coastal

This flow-through wetland project is located within Maumee Bay adjacent to Cullen Park. Flow from the Maumee River will be directed into protected shallow-water areas that will support wetland vegetation, trap suspended sediment, process nutrients, create new fish and wildlife habitat, and enhance recreational opportunities.

Project size: 140 Acres
Project site type: Public
Partners: Toledo-Lucas County Port Authority & City of Toledo

2. Grassy Island Flow-through Wetland Restoration
Lucas County | Maumee River Watershed | Coastal

This flow-through wetland project is located north of the opening between Grassy Island and the Cullen Park causeway in Maumee Bay. Flow from the Maumee River will be directed into protected shallow-water areas that will support wetland vegetation, trap suspended sediment, process nutrients, create new fish and wildlife habitat, and enhance recreational opportunities.

Project size: 100 Acres
Project site type: Public
Partners: Toledo-Lucas County Port Authority & City of Toledo

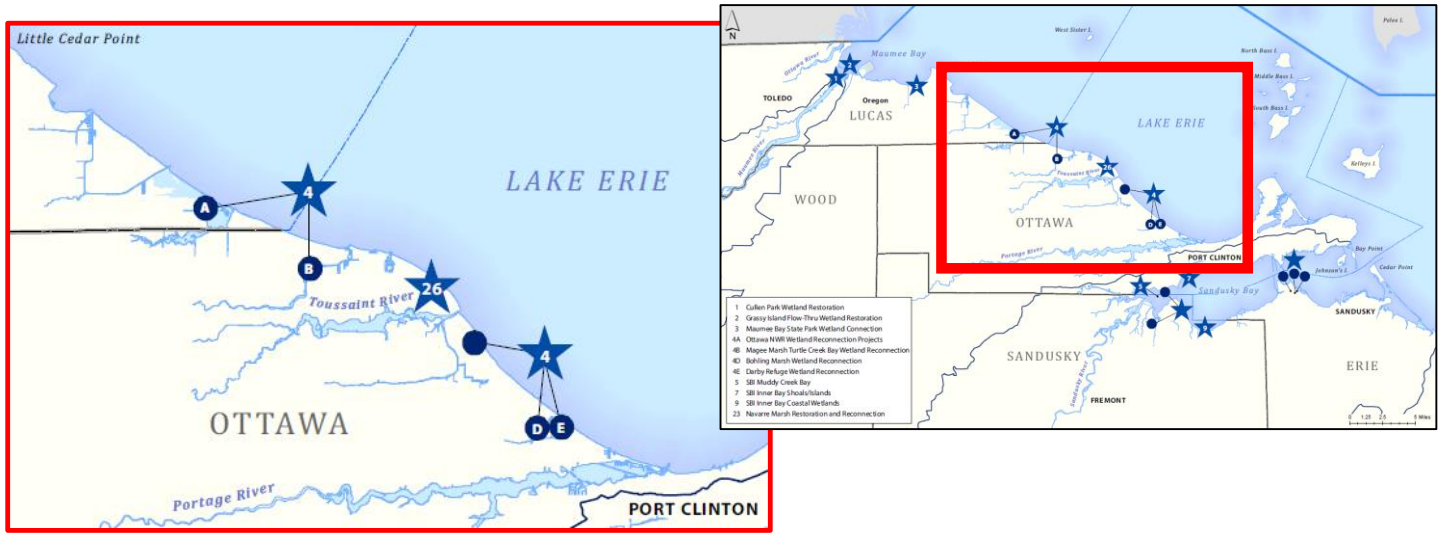
3. Maumee Bay State Park Wetland Restoration
Lucas County | Lake Erie Watershed | Coastal

A 137-acre enhanced wetland at Maumee Bay State Park will be connected to Lake Erie for the first time. Agricultural runoff will be redirected through the marsh where nutrient-laden water can be filtered before flowing into the lake. The project includes installation of a pump in an adjacent drainage ditch, a fish passage at the mouth of the wetlands, and replacement of invasive plants with native vegetation.

Project size: 137 Acres
Project site type: Public
Partners: The Nature Conservancy

H2Ohio Coastal

June 2020



4A. Ottawa National Wildlife Refuge Wetland Reconnection Projects

Lucas County | Crane Creek Estuary | Coastal

This project will reconnect three wetland habitat units totaling nearly 580 acres to Lake Erie via the Crane Creek Estuary, reducing nutrient loading into the lake as well as diverting agricultural drainage from the 57-square mile Crane Creek/Veler Road ditch upstream of the wetland habitats.

Project size: 577.75 Acres
Project site type: Public
Partner: Ottawa Soil & Water Conservation District

4B. Magee Marsh Turtle Creek Bay Wetland Reconnection

Ottawa County | Turtle Creek Watershed | Coastal

This project reconnects a large wetland habitat unit to Lake Erie that includes installation of water control structures to manage agricultural runoff during high-water level events on the lake. Acting as a pass-through system during such events, water from Turtle Creek will divert into the enhanced wetland unit to trap sediments and reduce nutrient loading.

Project size: 173 Acres
Project site type: Public
Partner: Erie Soil & Water Conservation District

4D. Bohling Marsh Reconnection

Ottawa County | La Carpe Creek Watershed | Coastal

One of the many remnants of the Great Black Swamp, this project would reconnect 55 acres of wetland to LaCarpe Creek, which flows into Lake Erie. Water quality will be improved by passively treating nutrient-rich waters that pulse into the emergent/submergent coastal wetland. Additionally, once completed, this high-quality wetland will serve as fish spawning areas and nursery rearing habitat for larval fish.

Project size: 55 Acres
Project site type: Private
Partner: Ottawa Soil & Water Conservation District

4E. Darby Refuge Wetland Reconnection

Ottawa County | La Carpe Creek Watershed | Coastal

Two wetland units will be reconnected to Lake Erie by breeching an interior wetland levee as well as one along La Carpe Creek, which empties into the lake. Installation of water-control structures will divert agricultural runoff into the wetlands to trap sediments and reduce nutrient loading into Lake Erie.

Project size: 352.2 Acres
Project site type: Public
Partner: Ottawa Soil & Water Conservation District

26. Navarre Marsh Wetland Restoration & Reconnection

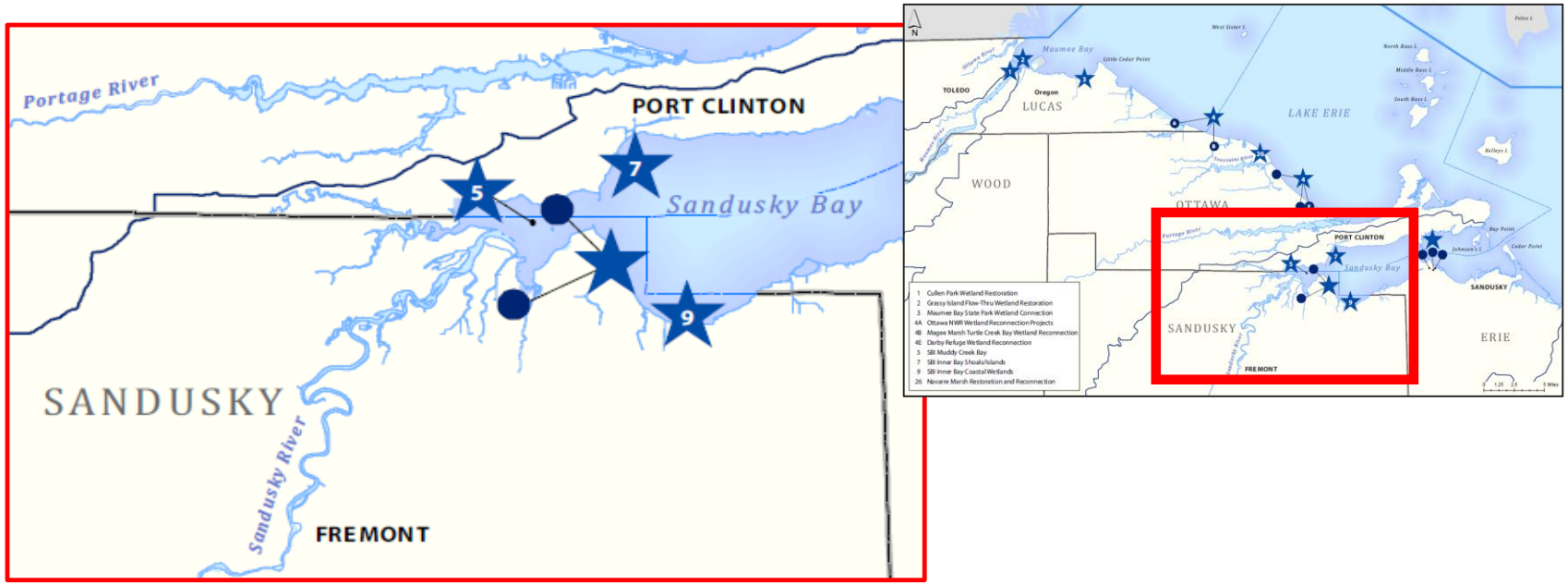
Ottawa County | Toussaint River Watershed | Coastal

H2Ohio funds are supporting a project on the Ottawa National Wildlife Refuge to upgrade wetland management infrastructure, reestablish a hydrological connection with Lake Erie from the mouth of the Toussaint River; it also provides the added benefit of a restored seasonal fish passage. Wetland restoration and reconnection will filter more than 70 acres of agricultural drainage, slowing peak flow, and preventing excess nutrients and sediments from entering the lake. In addition to Ducks Unlimited, partners on this project include the U.S. Fish & Wildlife Service and First Energy.

Project size: 628 Acres (of total 779 Acre project)
Project site type: Public
Partner: Ducks Unlimited

H2Ohio Coastal

June 2020



5. Muddy Creek Bay
Sandusky County | Sandusky Bay Watershed | Coastal

This project will create up to four low-relief nature-based shoals and/or islands within the open waters of Western Sandusky Bay. The plan anticipates using material dredged from the bay to create the low-relief shoals and islands.
These shallow-water shoals would significantly improve bay water quality by reducing wave energy and creating quiet-water areas that promote the growth of aquatic wetland vegetation that will process and remove nutrients and sediments from the water. Removal of fine-grained sediment from the bay bottom also could expand potential fish-spawning habitat.

Project size: 100-plus Acres
Project site type: Public
Partners: The Nature Conservancy

7. Inner Bay Shoals & Islands
Sandusky County | Sandusky Bay Watershed | Coastal

Up to four low-relief nature-based shoals and/or islands will be created within the open waters of the inner western Sandusky Bay. The plan anticipates using dredged material from the bay to create low-relief shoals and islands. These shallow-water shoals would significantly improve bay water quality by reducing wave energy, creating quiet-water areas where aquatic vegetation can grow and trap nutrient-rich sediment. Removal of fine-grained sediment from the bay bottom also could expand potential fish-spawning habitat.

Project size: 400 Acres
Project site type: Public
Partners: The Nature Conservancy

9. Inner Bay Coastal Wetlands
Sandusky County | Sandusky Bay Watershed | Coastal

Focused along the southern shore of Western Sandusky Bay, these projects will restore coastal floodplain wetlands and create new in-water wetland habitat. The restored coastal floodplain wetlands near Pickerel Creek will trap sediment and process nutrients from adjacent agricultural areas. Nature-based shoreline wetlands will improve nearshore water quality, reduce sediment resuspension, and restore shallow-water fish and wildlife nursery and spawning habitats in Sandusky Bay.

Project size: 65 Acres
Project site type: Public
Partners: The Nature Conservancy

Inland Western Lake Erie Basin

June 2020

10. St. Joseph Confluence
Williams County | Maumee River Watershed | Inland WLEB

A combination of nutrient-reduction practices is planned for this project site, which currently has 20 acres in agricultural use. Efforts include decommissioning subsurface drainage tiles, expansion of existing wetlands, and creation of new ones. Native vegetation, including shrubs and sedges, will be planted to help hold nutrients on the land, preventing them from entering nearby waterways. A deciduous forest of native trees also will be restored, within which nutrient and sediment-trapping vernal pools will naturally occur.

Project size: 140 Acres
Partners: Black Swamp Conservancy

11. St. Joseph River Wetland Restoration
Williams County | Maumee River Watershed | Inland WLEB

H2Ohio funds facilitated purchase of nearly 94 acres of farmland along the main stem of the St. Joseph River in Florence Township. Included in the project will be restoration of 56 acres of wetlands and forest as well as naturalize tiled and ditched waterways to create meandering streams through the property. This property also will demonstrate how sustainable farming contributes to improved water quality.

Project size: 93.8 Acres
Partner: Black Swamp Conservancy

13. Oak Openings Preserve Metropark Wetland
Lucas County | Maumee River Watershed | Inland WLEB

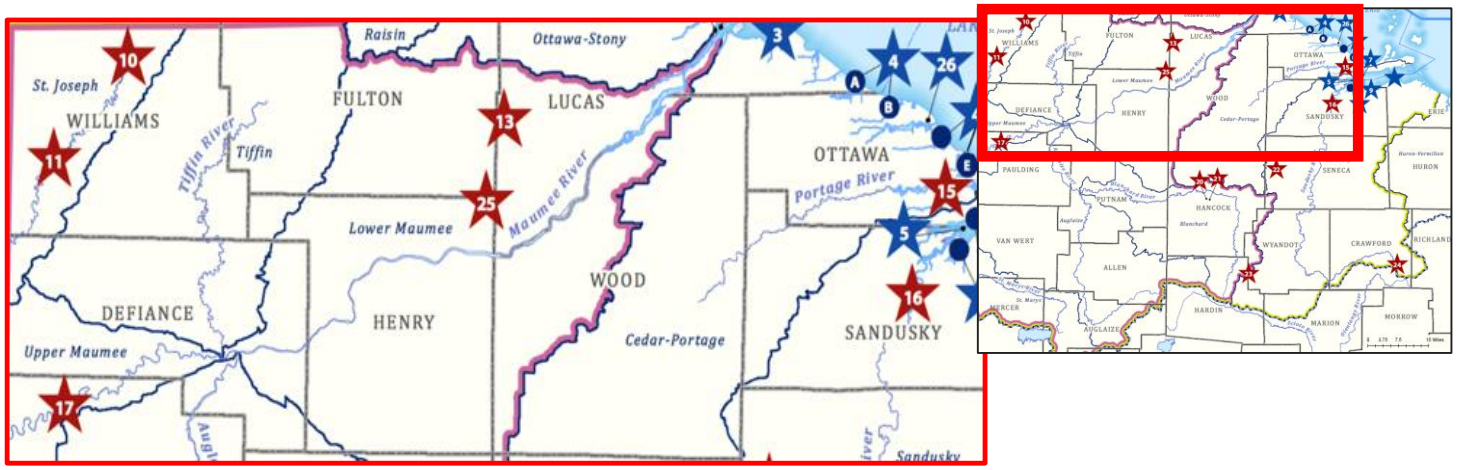
Functional wetlands and associated habitat will be restored to land currently in agricultural production. This project will regrade and restore previously farmed lands into wetland habitat adjacent to the Metroparks Toledo Oak Openings Preserve. Forested wetlands and prairie habitat will be added along Ai Creek. Additionally, more than 15,000 native hardwood trees will be planted throughout the property.

Project size: 48 Acres
Project site type: Public
Partners: Metroparks Toledo

15. Little Portage Restoration
Ottawa County | Portage River Watershed | Inland WLEB

At least 190 acres of agricultural runoff that now flows directly into the Little Portage river will be diverted into two restored wetlands. This project has the potential of capturing an additional 215 acres of nutrient and sediment-rich drainage from area farmland. These efforts will not only improve water quality for Ohioans, but also provide increased habitat for wildlife.

Project size: 98 Acres
Project site type: Public
Partner: Ducks Unlimited



16. Redhorse Bend Wetland Restoration
Sandusky County | Sandusky River Watershed | Inland WLEB

This project will reconnect 55 acres of floodplain habitat to the Sandusky River, including wetland and riparian restoration. Two ditches flowing through the site will be restored to headwater streams to enhance the natural filtration of surface water runoff. Redhorse Bend, which transfers to Sandusky County Parks after restoration is completed, will be managed as a public park, and protected as a natural area in perpetuity through a conservation easement.

Project size: 55 Acres
Project site type: Public
Partners: Black Swamp Conservancy

17. Forder Bridge Wetland Restoration
Paulding County | Maumee River Watershed | Inland WLEB

A series of up to four wetlands will be created along a headwater stream on the Forder Bridge property to capture nutrients, reduce erosion, and restore headwater-stream habitat along the Maumee River. Stream banks will be re-contoured in strategic locations to reconnect them to floodplains.

Project size: 54 Acres
Project site type: Public
Partners: Black Swamp Conservancy

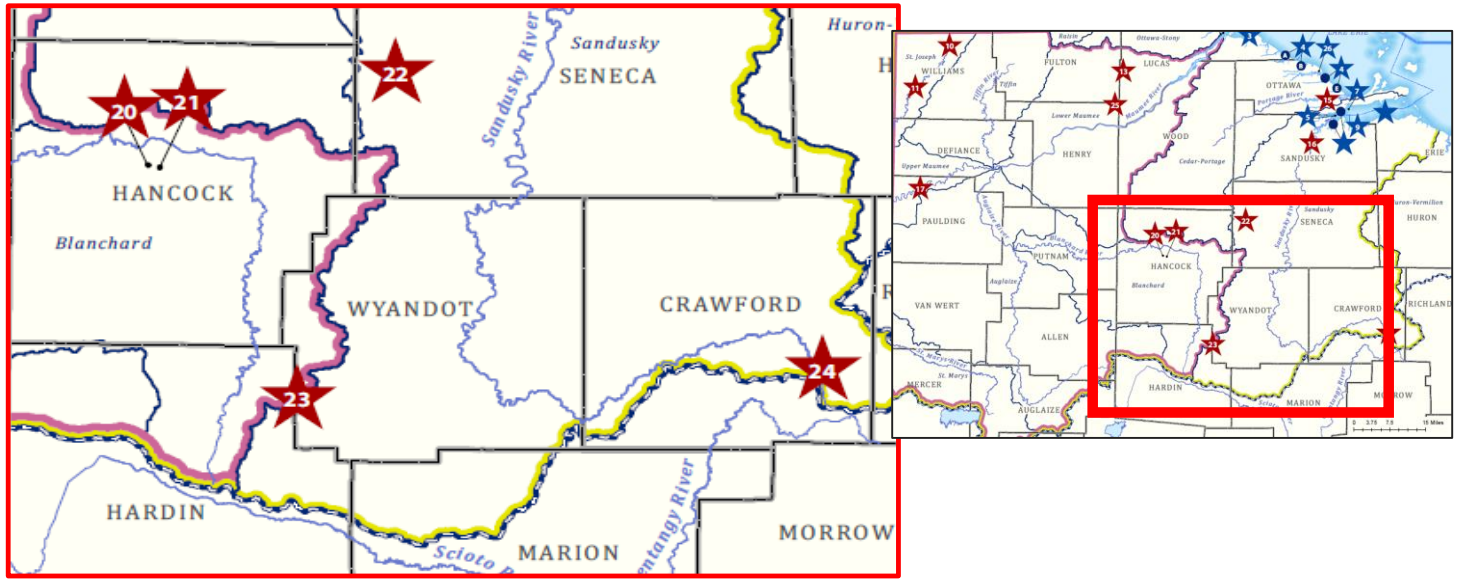
25. Van Order Woodland & Wetland Restoration
Henry County | Maumee River Watershed | Inland WLEB

Most of this 31-acre tract of land is in active agricultural production. In addition to land acquisition, this project includes tree planting, woodland restoration, and wetland creation to capture phosphorus-laden runoff. These efforts will help prevent nutrients from entering agricultural ditches and slow peak flow into nearby waterways.

Project size: 31 Acres
Project site type: Public
Partner: ODNR Division of Forestry

Inland Western Lake Erie Basin

June 2020



20. Oakwoods Nature Preserve West Aurand Run
Hancock County | Blanchard River Watershed | Inland WLEB

This project improves water quality by taking agricultural lands out of production and creating or restoring wetlands, woodlands, and prairie. Aurand Run traverses the project area and will be reconnected to its floodplain, allowing nutrient-rich streamflow to be treated through three acres of riparian wetlands. Other project efforts include decommissioning subsurface drain tiles, enhancement of degraded riparian habitat along Aurand Run, and restore a buffer to protect 15 acres of an existing high-quality forested wetland.

Project size: 77 Acres
Project site type: Public
Partners: Hancock Park District

21. Oakwoods Nature Preserve East
Hancock County | Blanchard River Watershed | Inland WLEB

Most of this project's existing agricultural lands will be converted into wetlands and the remainder is to be developed as native prairie. The work includes restoring natural hydrology to the landscape by decommissioning agricultural field tiles and diverting that water flow through wetland treatment areas. These wetlands also will serve to treat runoff from nearby active agricultural lands.

Project size: 65 Acres
Project site type: Public
Partners: Hancock Park District

22. Fruth Outdoor Center
Seneca County | Sandusky River Watershed | Inland WLEB

Existing wetlands will be restored and expanded on this property, which is in the headwaters of Wolf Creek, a tributary of the Sandusky River. Work will include excavation of a grass field allowing it to revert to its former wet woods ecosystem. The project also calls for breaking drainage tile to restore natural hydrology to the surrounding area as well as planting trees and other vegetation native to Ohio wetland habitats.

Project size: 18 Acres
Project site type: Public
Partners: Black Swamp Conservancy

23. Andreoff Wetland Restoration
Wyandot County | Outlet of the Blanchard River Watershed | Inland WLEB

This project facilitates the purchase of 398 acres of primarily agricultural land within the larger Maumee River Watershed. Upon acquisition, work will begin to create and restore wetlands to trap phosphorus-laden sediment from agricultural runoff. The project also will dismantle tile on the property to restore natural hydrology.

Project size: 398 Acres
Project site type: Public
Partner: Ducks Unlimited

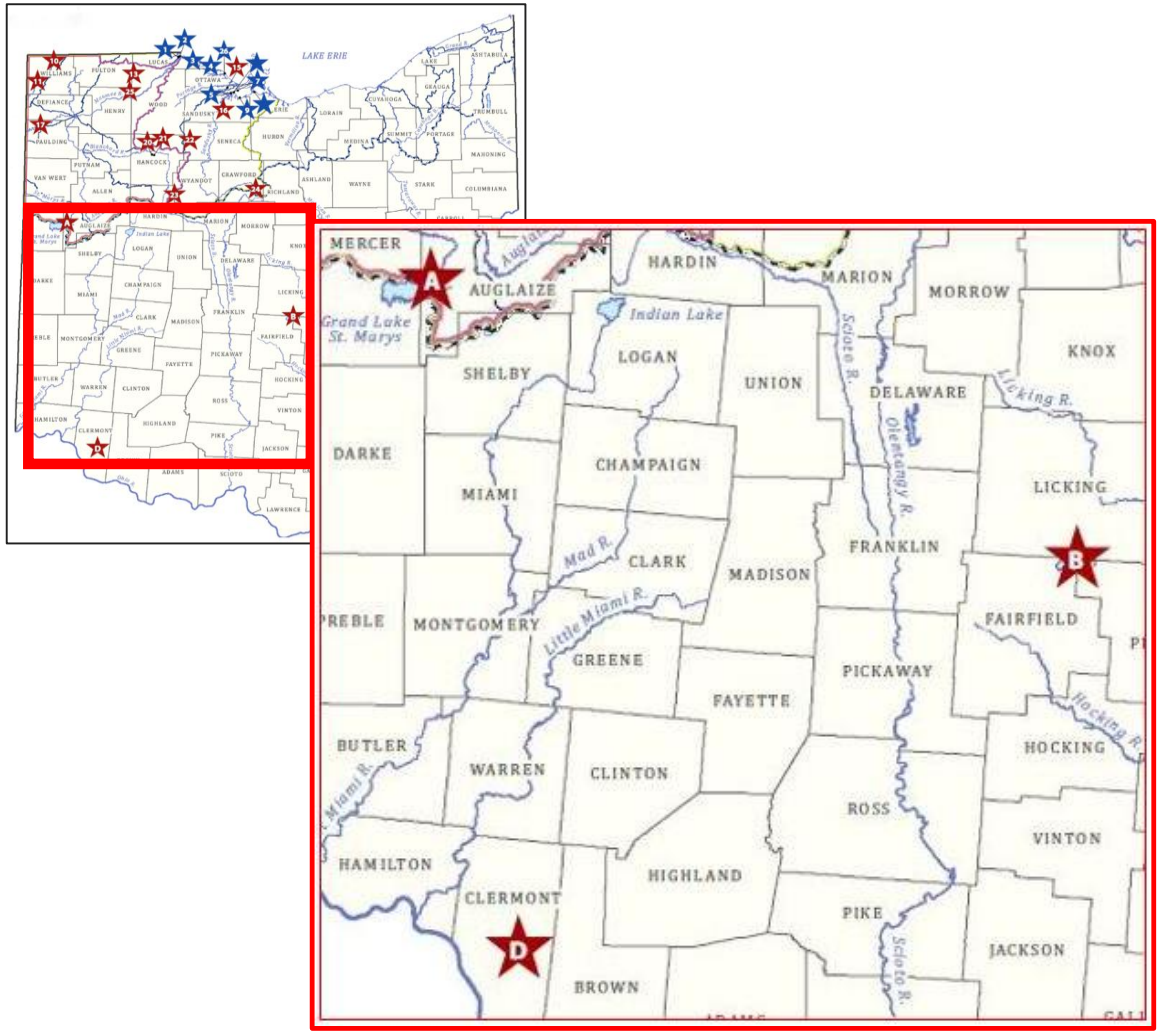
24. Sandusky River Headwaters Preserve
Crawford County | Sandusky River Watershed | Inland WLEB

This property features approximately 2,300 feet of the Sandusky River. The project will create wetlands on a 7-acre agricultural field as well as develop pollinator habitat. The scope of work includes decommissioning drain tile, diversion of an intermittent stream through a constructed seasonal wetland, and planting wetland forbs and grasses in and along the perimeter of the wetlands. These combined efforts will improve water quality by reducing nutrient loading into the Sandusky River.

Project size: 38 Acres
Project site type: Public
Partners: Crawford Park District

Inland Statewide

June 2020



A. Grand Lake St. Marys – Burntwood Creek Wetland Restoration

Mercer County | Coldwater Creek Watershed | Inland Western Ohio

This project would be the fourth treatment train associated with nutrient-reduction efforts at Grand Lake St. Marys. The Lake Facilities Authority seeks to purchase property in Butler Township with a Clean Ohio grant, which would be awarded. Upon acquisition, the H2Ohio program will fund construction of a treatment train featuring three created wetlands, several acres of new trees, and a large buffer area of planted grasses/forbs.

Project size: 90 Acres
Project site type: Public
Partner: Lake Facilities Authority

B. Buckeye Lake – Brooks Park Beach Wetland Creation

Fairfield County | Licking River Watershed | Inland Eastern Ohio

This project will create a wetland along a tributary stream that receives storm-water runoff from adjacent agricultural fields before discharging into Buckeye Lake. By redirecting the stream through the wetland, nutrients and sediments will be captured and prevented from flowing into the lake.

Project size: 1.5 Linear Acres
Project site type: Public
Partner: ODNR Division of Parks & Watercraft

D. Harsha Lake – Upper East Fork of Little Miami Headwaters

Clermont County | East Fork Little Miami River Watershed | Inland Southwestern Ohio

The proposed project involves three separate components, all of which improve water quality by reducing phosphorus and nitrogen levels in Harsha Lake. The first is creation of a 3-acre wetland treatment system at the former Williamsburg reservoir. This project component anticipates incorporating adaptive management and creating enhanced fish and amphibian habitat. Under the second component, a detailed assessment of the Harsha Lake watershed will be conducted to identify priority areas for additional constructed wetlands. The final component includes identifying and securing a site by June 2021 for a second wetland with construction anticipated to begin before the end of that year.

Project size: 3 Acres
Project site type: Public
Partner: Clermont Soil & Water Conservation District


hio
Ohio Environmental
Protection Agency

H2Ohio

$3,500,000
For Six Critical Water and Sewer Projects

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

Three drinking water projects in Pike, Coshocton, and Columbiana counties serving 4,000 people in rural Ohio.

$1,250,00

Lead service line and fixture replacement for safer water at Ohio daycare facilities.

$1,750,00

To seven local health districts for replacement of household sewage treatment systems.

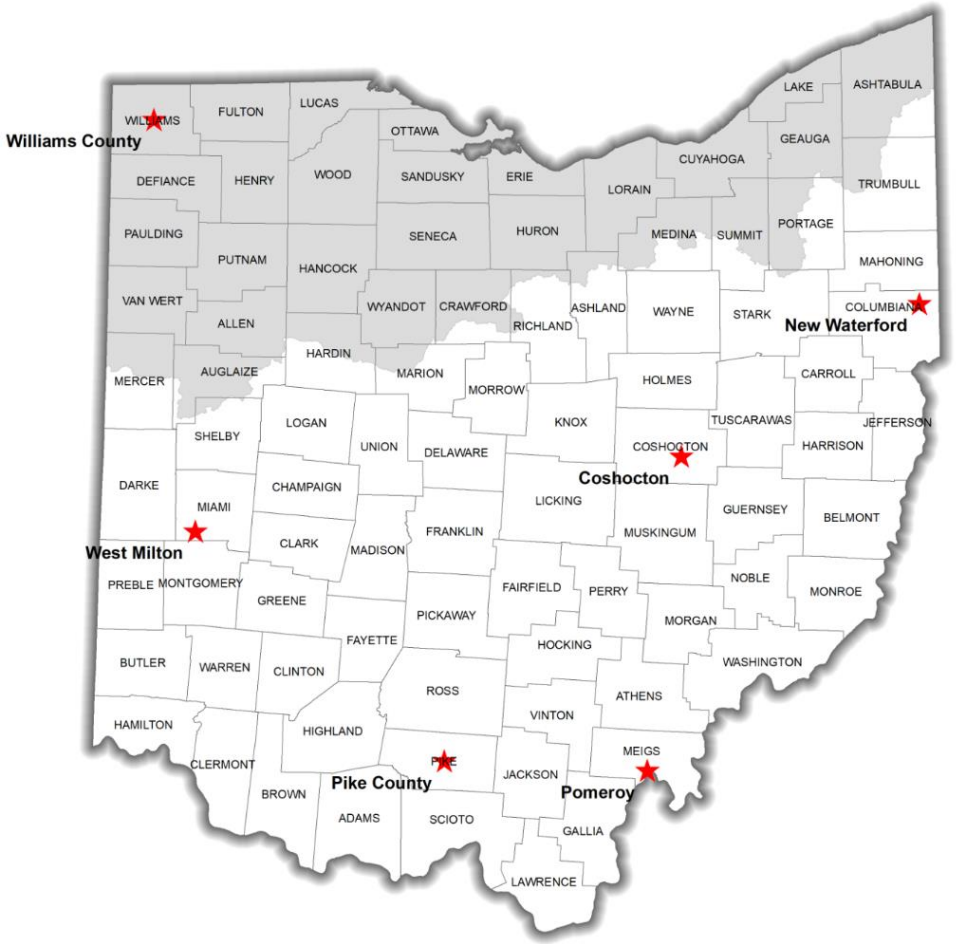
Increased Monitoring and Data Collection

Installing an additional 20 rain gages to improve weather forecasting and rainfall estimates in northwest Ohio.

MIKE DEWINE
GOVERNOR OF OHIO

Ohio Environmental Protection Agency

Wastewater and Water Infrastructure Funding

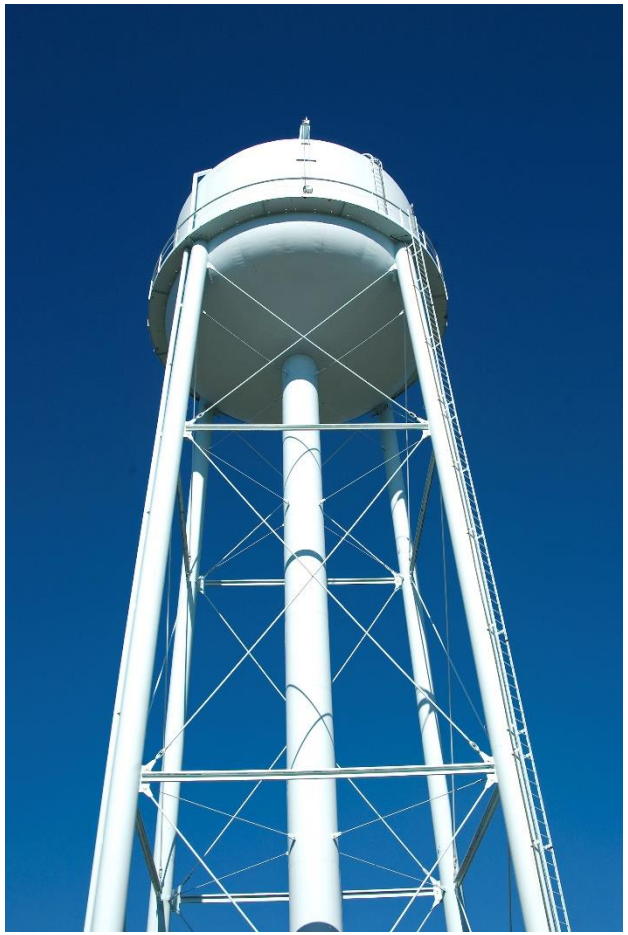


- Six communities
- $3,500,000 total
- Drinking water projects addressing contaminated wells and inadequate water supply
- Wastewater projects serving disadvantaged communities with failing HSTS

$1.5 Million in Wastewater Infrastructure Funding

- $500,000 for Pomeroy, Williams County, and West Milton
- Projects are predominantly serving low-income, unsewered areas
- Failing HSTS are a health concern and source of nutrient pollution
- Leveraged with additional State Revolving Fund principal forgiveness

$2.0 Million in Drinking Water Infrastructure Funding



- $500,000 for Coshocton and New Waterford, $1,000,000 for Pike Water
- Projects are addressing ground water contamination, unsafe private wells, and inadequate water supply for a school complex.
- Leveraged with additional State Revolving Fund principal forgiveness dollars.

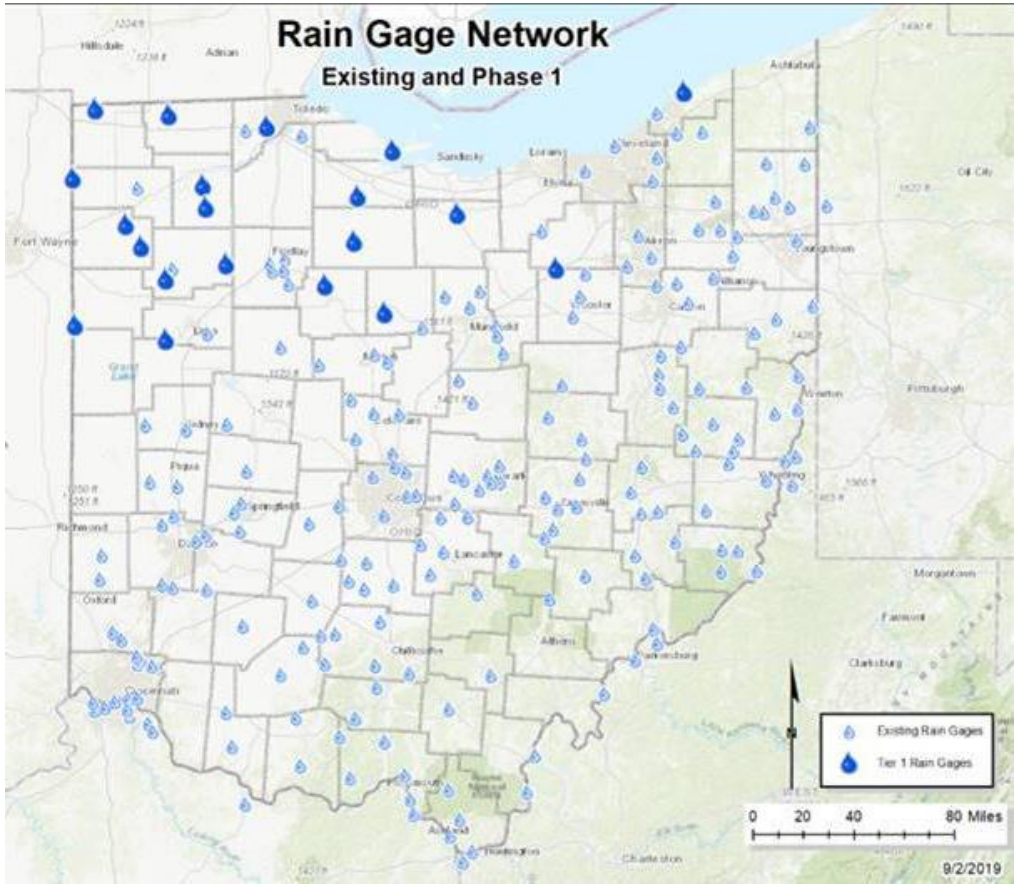
$1.75M Household Sewage Treatment System (HSTS) Funding in Western Basin

- Seven local health districts (LHDs)
- $250,000 each
- Failing HSTS replacements/repairs
- Target low-income homeowners
- Provides opportunity to expand overall statewide efforts to address failing HSTS. To date, $10.8 million in principal forgiveness awarded statewide for 73 counties.

Daycare Lead Service Line (LSL) Replacement

- $1.25 million in targeted funding to address LSL and lead fixtures
- $725,000 for LSL replacements at 185 childcare facilities; $500,000 for fixture replacements inside daycare centers
- Limited to licensed childcare centers
- Leveraged federal grant funding will address water quality testing after LSL removal

Twenty New Rain Gages Installed Throughout Northwestern Ohio



- $136,000 invested in rain gages filling a gap in Doppler weather radar network
- Improves flood forecasting as well as nutrient runoff modeling and the manure runoff risk tool

Three New Nutrient Monitoring Gages in Southern Ohio

- $432,500 invested in water quality monitoring gages at three Ohio River tributary streamflow gages
- Adds nearly 3,000 square miles of watershed coverage to Ohio EPA's Nutrient Mass Balance study
- Brings the mass balance study up to covering 72% of Ohio

Technology Vetting Program

H2Ohio funding of $500,000 to set up a third-party technology vetting process to evaluate emerging technologies that:

- Reduce or remove nutrient loading to streams and lakes;
- Reduce toxicity of algal blooms;
- Improve nutrient removal from wastewater; and
- Recover nutrients from manure.

Creating an avenue to move viable technologies from demonstration to implementation to improve water quality in Ohio.

Technology Vetting Program Schedule

- Ohio EPA is currently in the process of selecting a technical consulting firm that will evaluate technology proposals.
- We are also working on establishing pre-screening processes, program administration and partnership with external stakeholders that have valuable technical expertise.
- Goal of launching the full program in October 2020 and begin accepting technology proposals.

Contacts

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Ohio Department of Agriculture

Ohio Environmental Protection Agency

Ohio Lake Erie Commission

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