

# PORTAGE COUNTY HEALTH DISTRICT



HEALTH DISTRICT

## **STORM WATER PROGRAM** **2018 ILLICIT DISCHARGE DETECTION AND ELIMINATION ANNUAL REPORT**



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## Introduction

The Portage County Board of Commissioners (BOC) contracts with the Portage County Combined General Health District (PCHD) to implement the Portage County Storm Water District's Minimum Control Measure (MCM) #3 - Illicit Discharge Detection and Elimination (IDDE) in accordance with Ohio Environmental Protection Agency (OEPA) National Pollution Discharge Elimination System (NPDES) permit requirements and the Portage County Storm Water District's goals to achieve sustainable water quality throughout Portage County.

PCHD is pleased to share the 2018 action plan, implementation activities, achievements of the Storm Water Program in this 2018 Illicit Discharge Detection and Elimination (IDDE) Annual Report. This report is a component of the Portage County Storm Water District's annual report submission to OEPA.

## 2018 Action Plan

The Health District's 2018 Storm Water Action Plan is based on, but not limited to the scope of services outlined in the Portage County Storm Water Program contractual agreement between the PCHD and the BOC for storm water services:

1. Ensure compliance with Resolution No. 09-0836 (prohibits the connection to or continued System (MS4)
2. Ensure that the PCHD Storm Water Program has adequately trained staff to identify failing household sewage treatment systems (HSTS) and detect illicit discharges. Training may include the use of sampling equipment and mapping software for water quality testing, Global Positioning System (GPS) units for data collection and Geographical Information System (GIS) software for mapping. Staff will be trained about the Ohio Department of Health's design requirements for HSTSs and the Ohio Revised Code (ORC) requirements to determine a public health nuisance
3. Work with partners involved in the Storm Water District's program: Portage County Board of Commissioners (BOC), Portage County Engineer's Office (PCEO), Portage County Soil and Water Conservation District (SWCD). In addition, build on the healthy working relationships with townships, villages, and the citizens to ensure the Storm Water District's success
4. Assess, organize, and investigate potential illicit discharges throughout Portage County and refer to the appropriate agency for enforcement
5. Evaluate the PCHD HSTS files and document potential failing HSTSs
6. Accept, record, compile HSTS information and nuisance complaints from villages, townships, government entities, and residents

7. Gather information from SWCD, townships, and Ohio EPA regarding discharges that were not from HSTS
8. Update the existing databases of suspected and reported illicit discharges to be utilized in the execution of field work, documentation, and reporting
9. Investigate nuisance complaints, conduct field inspections, perform dye testing, and surface water sampling to verify public health nuisances and illicit discharges
10. Identify failed and illicit discharging systems through voluntary property transfer inspections
11. Issue notices of violation, as necessary in all confirmed illicit discharging cases to obtain compliance and abatement
12. Update failing and suspected illicit discharging HSTS maps
13. Identify houses served by HSTS within areas of available and accessible public sanitary systems and seek confirmation from agencies in charge of the public sanitary sewers
14. Conduct field inspections to identify, verify, dry weather screen, sample, test, and evaluate outfall points, to detect storm water contamination
15. Update storm water outfall points' database and maps accordingly
16. Map all HSTSs replaced between 2010 and 2018 in the county
17. Assist SWCD upon request to train village, township, and municipal employees and develop educational materials, public announcements, and information for homeowners
18. Conduct public educational outreach through distribution of educational materials and performing outreach to inform citizens about the impacts polluted storm runoff can have on water quality
19. Attend quarterly Portage County Storm Water Program Task Force meetings. Provide quarterly statistical report of inspections, consultations and sampling
20. Compile the 2018 PCHD Storm Water Program annual report for all stakeholders

## 2018 Storm Water IDDE Notable Achievements

In pursuance of the Storm Water Program's 2018 action plan for illicit discharge detection and elimination (IDDE) in Portage County's townships and villages, Storm Water Program staff conscientiously built upon the existing storm water management plan towards achieving the long term objective of sustainable water quality. The PCHD staff continued to enhance the healthy working relationships with County Commissioners, townships, villages, County Engineer's office, SWCD, Water Resources Department, and the citizenry to achieve our storm water goals. In particular, the Storm water program successfully achieved the following milestones:

- Completed PCHD's 2018 outfall verifications and dry weather screening goal
- Applied for and successfully received \$150,000 in financial assistance for low-to-moderate income homeowners from the 2019 Ohio Environmental Agency (EPA) Division of Environmental Financial Assistance (DEFA) Water Pollution Control Loan Fund (WPCLF) for the repair and/or replacement of household sewage treatment systems
- Eliminated 87 public health nuisances through successful HSTS repairs, replacements or connections to public sanitary sewer and abatement of other storm water illicit discharges
- Eliminated 43 illicit discharging HSTS through successful repairs, replacements or connections to public sanitary sewer. This helped to reduced considerable amount of nutrients from the waters of the state
- Disbursed \$300,000 in financial assistance received for low-to-moderate income homeowners from the 2017 WPCLF for the repair and/or replacement of 23 in 2018 HSTSs
- Updated all storm water system maps and distributed them to townships and villages
- Sent enforcement letters to addresses of houses served by HSTS within areas of available and accessible public sanitary systems to connect to the public sanitary system
- Mapped all HSTS replaced between 2010 and 2018 in the county

## Illicit Discharge & Detection Elimination (IDDE)

An Illicit discharge is any discharge to an MS4 storm water conveyance line or outfall point that is not composed entirely of stormwater. Illicit discharges into the storm drain system contribute reasonable amount of pollutants to the surface and groundwater. A variety of transitory, intermittent, and long-lasting illicit discharges are produced by accident or careless practices at the home or workplace. These types of illicit discharge flows from homes, businesses, manufacturing, industry, and commercial establishments include sewage effluent, gray water (laundry), car wash residues, and illegal dumping of oil and paint among others. Detection and elimination of illicit discharges from the storm drainage systems is a challenging task. PCHD has adequately trained staff and evidence-based storm water management plan including creation and maintenance of illicit discharge database, HSTS nuisance complaint investigation, voluntary HSTS evaluation for replacement, point of sale HSTS evaluation inspection and dry weather outfall screening to facilitate the achievement of Portage County Stormwater District's IDDE objectives.

### Suspected Illicit Discharge Database

In 2010, PCHD evaluated the existing HSTS files, documented and compiled potential illicit discharging and failing HSTSs. Illicit discharge data and information received from villages, townships, county engineer, SWCD, and/or the public were also documented and compiled. PCHD

created an Excel database from the collected data and information primarily for the implementation of the Storm Water Program's minimum control measure (MCM) #3 which requires illicit discharging detection and elimination (IDDE) to limit the quantity of pollutants discharging into the waters of the state in order to protect aquatic environment and public health. This suspected illicit discharge database consists mainly of, but not limited to only illicit discharging from failing HSTS. It contains other illicit discharges such as gray water discharges as well. The database covers the total and cumulative numbers of:

- Suspected illicit discharging HSTSs
- Suspected class I aeration HSTSs without NPDES permit
- Suspected illicit discharging HSTSs that are not class I HSTSs without NPDES permit
- Suspected illicit discharges inspected
- Suspected illicit discharging determined NOT to be illicit discharging
- Suspected illicit discharging identified and confirmed to be illicit discharges
- Confirmed illicit discharging eliminated
- Confirmed illicit discharging still pending replacement/repair/sewer connection

The total number of suspected illicit discharging in the database has fluctuated every year since its creation in 2010 due to detection of new cases and elimination of existing ones through replacement or repairs or when a suspected case is determined unjustified and closed. At the end of the year, the database is reviewed, analyzed, evaluated, and findings are included in the PCHD's Stormwater Program Annual Report. This database remains an important resource for HSTS information search, field inspection, and repository of evidence for violation enforcement.

The HSTSs in the suspected illicit discharge and detection elimination database are managed as a component of the Health District's operation and maintenance program by one of the four processes:

- Non-NPDES Class 1 Aeration Sewage Treatment System Inspections when homeowner fails to provide the required operation and maintenance service agreement
- Investigation upon receipt of a written nuisance compliance in accordance with Ohio Revised Code (ORC) 3718.011 and Ohio Administrative Code (OAC) 3701-29-23
- Identification during a voluntary Point-of-Sale real estate inspection; and
- Storm water random inspection.

HSTSs identified through any of the processes that need further assessment are evaluated to determine whether the system is causing a public health nuisance in accordance with Ohio Revised Code 3718.011. When an HSTS is determined to be causing a public health nuisance, PCHD works with homeowners and partner agencies to eliminate the nuisances to prevent HSTS pollutant discharges from entering the waters of the states.

## 2018 MS4 Storm Water Management IDDE Activities

### Training

PCHD storm water staff received both internal and external training in 2018. Internally, staff periodically met, read, and learned the nuances of the storm water program. Emily Speck was trained by Allison Manayan (Portage County Assistant Prosecutor) on how to use sections of the Ohio Revised code for nuisance violations enforcement.

Externally, Mary Helen Smith, Emily Speck, Dan Robinson, and Amos Sarfo attended the 11<sup>th</sup> Ohio Stormwater Annual Conference held in Sandusky (Ohio) from May 9- 11, 2018. During the conference, the staff attended and participated in variety of sessions, presentations, and educational field trips. This conference helped to deepen staff understanding of stormwater water management and to learn new developments in the program.

### Stakeholders' Meetings

In 2018, as members of the Portage County Storm Water Task Force and Steering Committee, the PCHD Health Commissioner, Director of Environmental Health, and Storm Water Program Supervisor attended both Storm Water Steering and Task Force Committees' quarterly meetings to discuss all pertinent storm water issues with the Storm Water District's stakeholders.

At these meetings, the PCHD presented summaries of stormwater activities including inspections, dry weather screening, dye testing, office/field consultations, GIS and data search, notices of violation issued for replacement/repairs, court appearances, and field/office research as they occurred during the performance of daily duties.

### Storm Water System Mapping

Using Geographic Information System (GIS) mapping software and hand-held Global Positioning System (GPS) receiver unit, Portage County Storm Water District has created comprehensive storm sewer system maps covering catch basins, drainage system pipes, ditches, and public and private post-construction flood control facilities, such as retention and detention ponds, that have been installed to meet Ohio EPA's NPDES Construction Storm Water general permit and/or local post construction water quality BMP requirements based on water quality best management practice (BMP). These maps are used to support IDDE and other storm water best management practices in the storm water district. The Portage County Storm Water District's GIS maps consist of the following:

1. Storm Water District's Outfall Points map depicting the location of all outfalls and the name and location of all state surface waters, including watersheds that receive discharges from those outfalls
2. Storm Water District's discharging household sewage treatment systems (HSTSs)
3. Storm Water District's municipal small separate sewage system (MS4) outfall points



4. Storm Water District's MS4 catch basins
5. Storm Water District's MS4 water quality BMP facilities
6. Storm Water District's MS4 pipe inlet and outlets

## **MS4 Storm Water Map Annual Updates**

In 2018, Portage County Health District Storm Water Program reviewed and updated the comprehensive Storm Water System GIS maps listed above. In November 2018, stormwater staff sent the updated maps to the townships and villages involved in the Portage County stormwater program for review. Copies were also given to any interested stormwater party upon request.

PCHD encouraged the township and village representatives to inform the Health District of any necessary changes upon receipt and review of the maps. PCHD storm water staff updates the maps annually to reflect any necessary changes requested by the township and village representatives or determined through PCHD staff field verification and dry weather screening inspections.

The 2018 updated MS4 area comprehensive storm water maps in Figures 1-5 show the following storm water system features that have been identified through field inspection and verification:

- 716 discharging household sewage treatment systems (HSTSs)
- 148 outfall point locations, and the names and locations of all state surface waters (note that some of the state water bodies do not have names) that receive discharges from those outfalls.
- 2247 storm water system catch basins in MS4 areas
- 603 storm water system drainage conveyance inlet pipes and 686 outlet pipes
- 93 water quality BMP facilities (i.e. retention and detention basins)

**Figure 1:** Portage Storm Water District MS4 Area Suspected Illicit Discharging HSTS: This map offers visual representation of known Storm Water District’s discharging household sewage treatment systems (HSTSs) in Portage County Storm. Water District's MS4 communities and location of all state surface waters including watersheds that receive discharges from storm water drainage system.

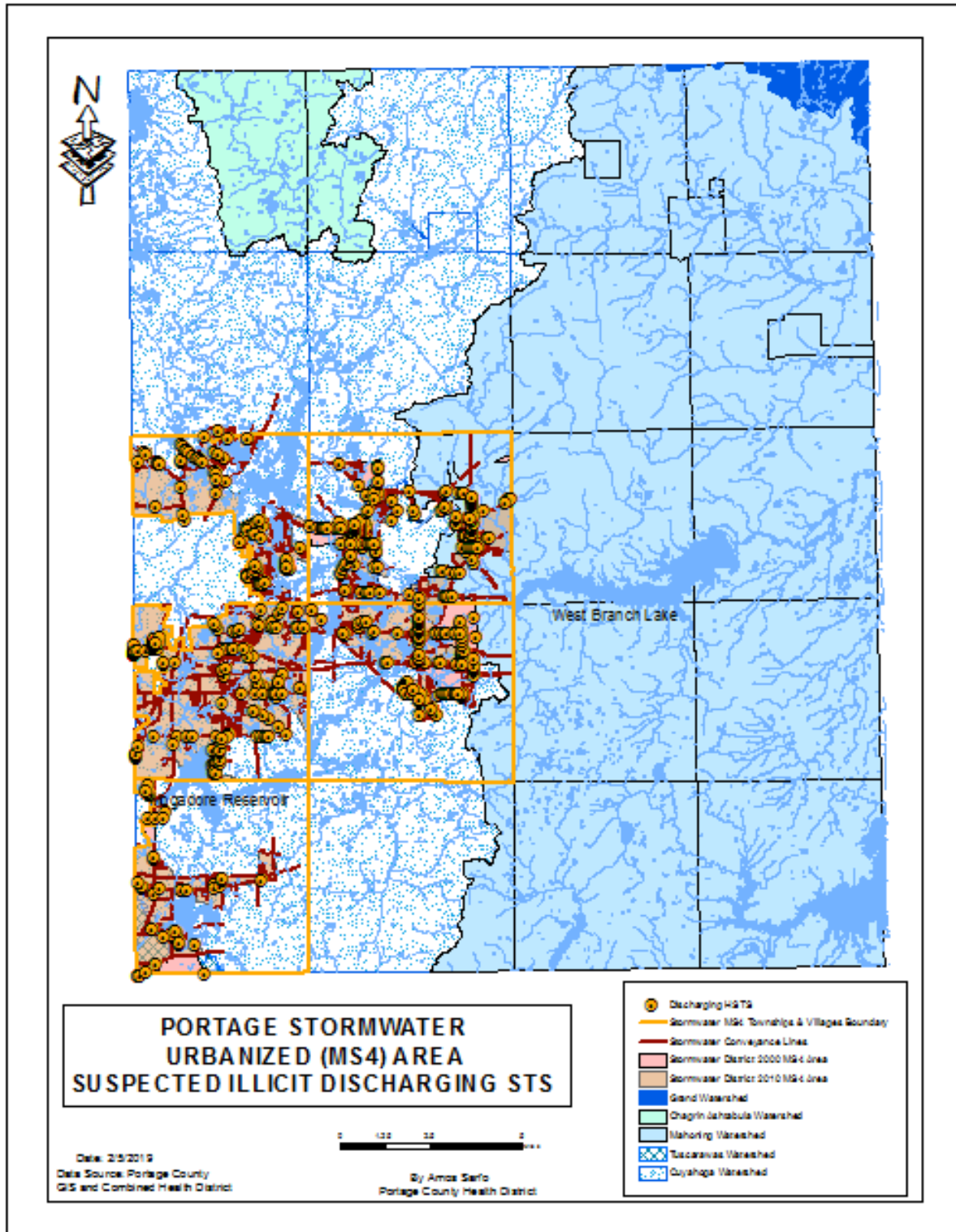
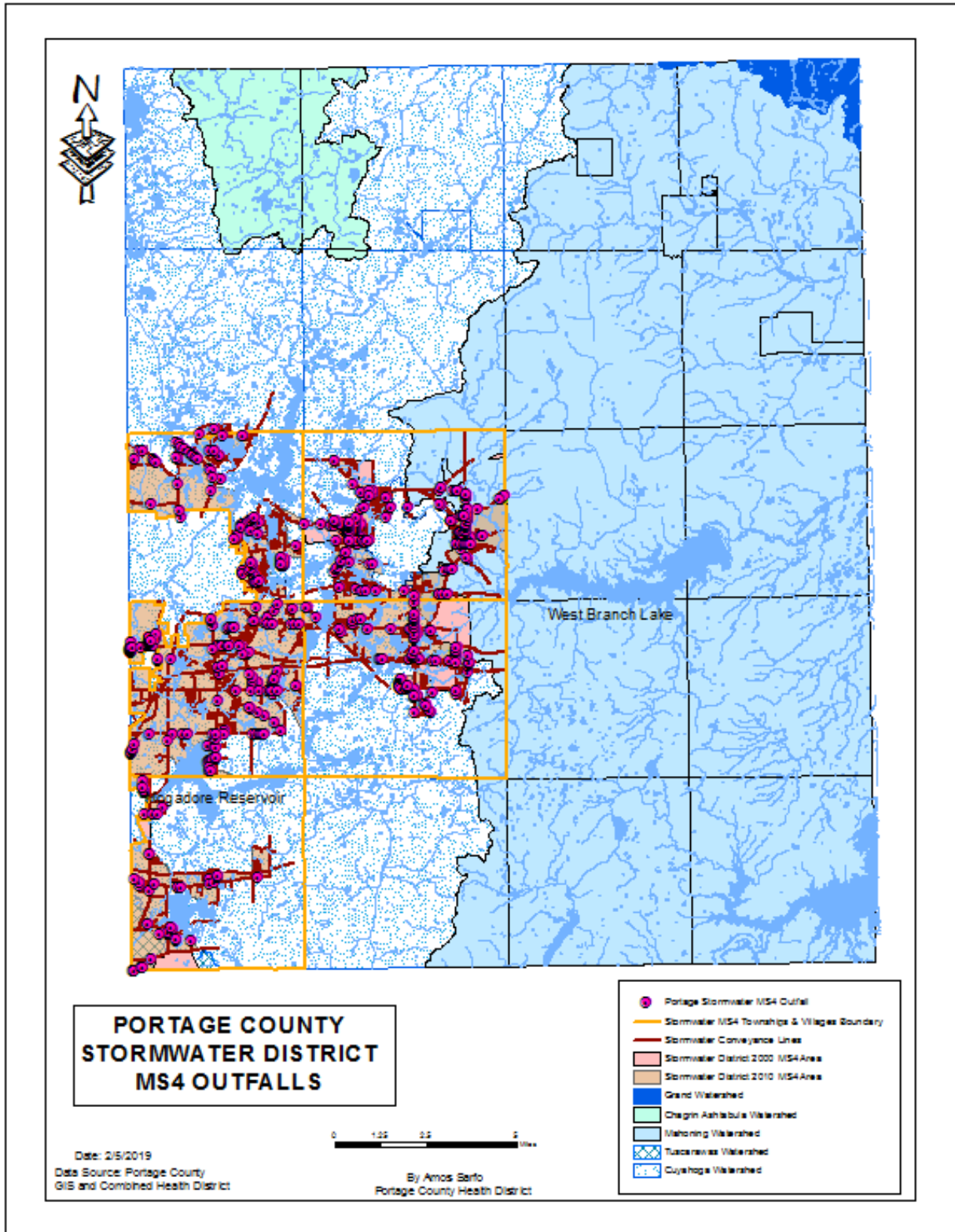
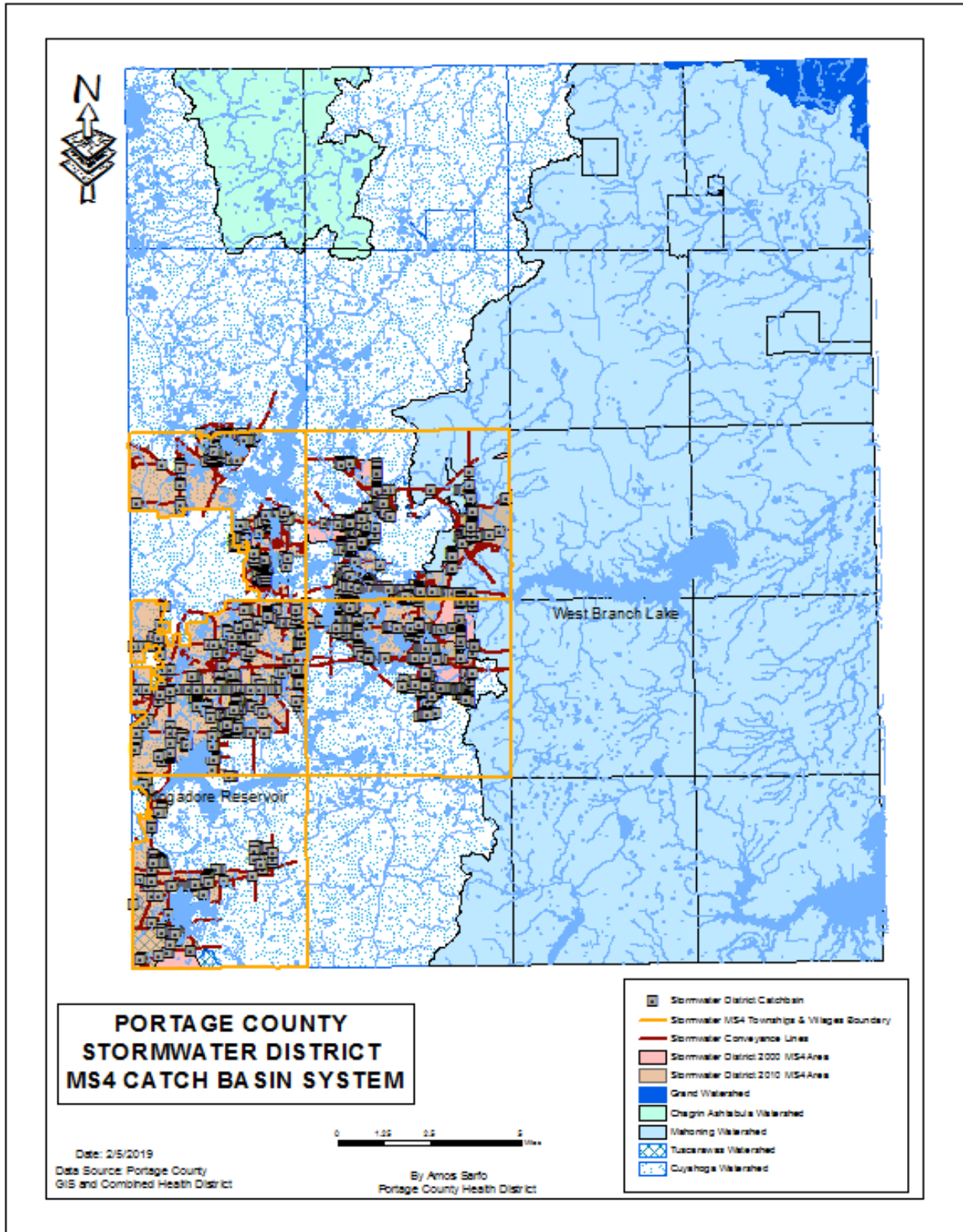


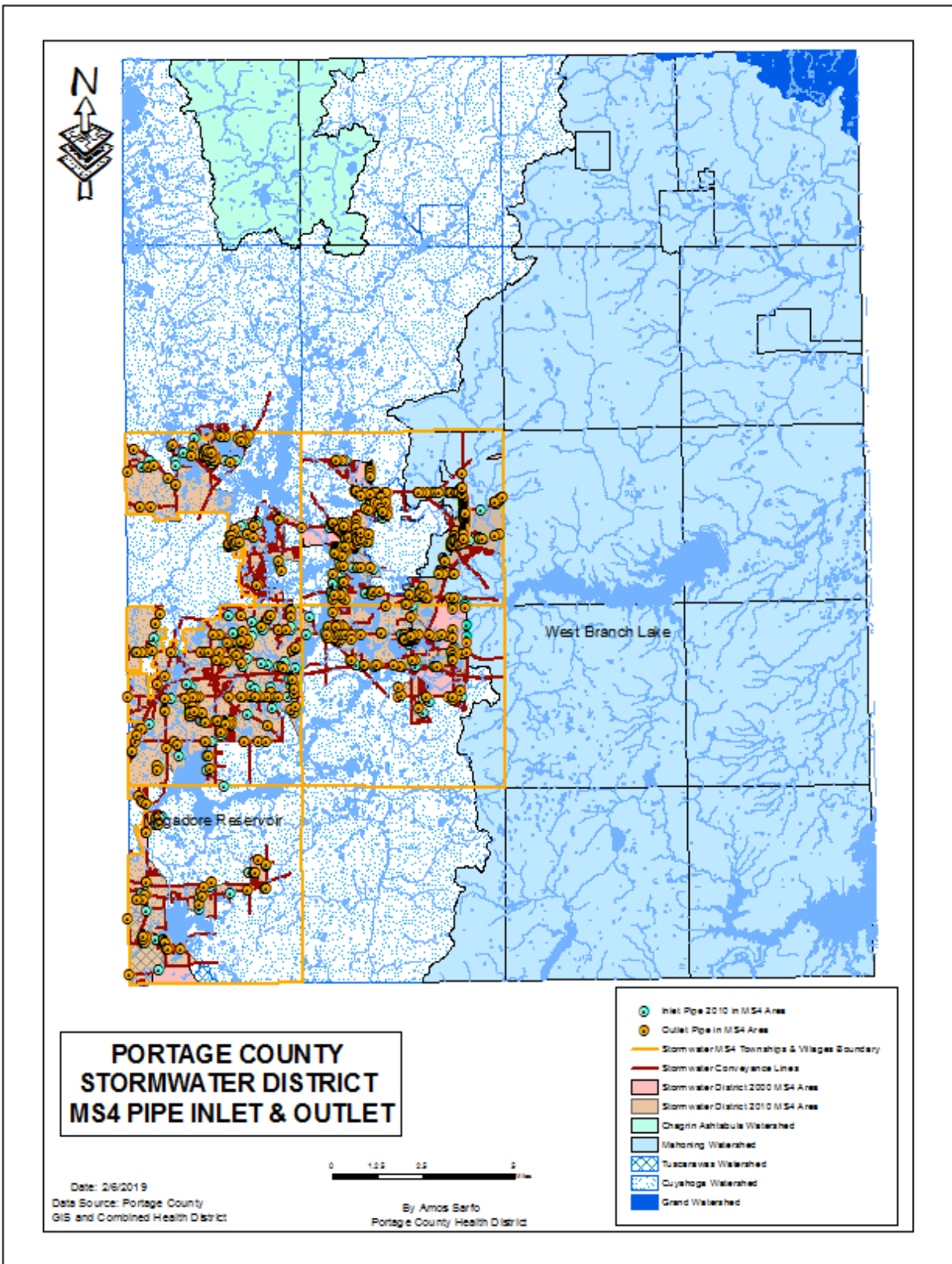
Figure 2: Portage County Storm Water District MS4 Outfalls: This map depicts spatial locations of Portage County Storm Water District's municipal small separate sewage system (MS4) outfall points and location of state surface waters including watersheds that receive discharges from the storm water system outfalls.



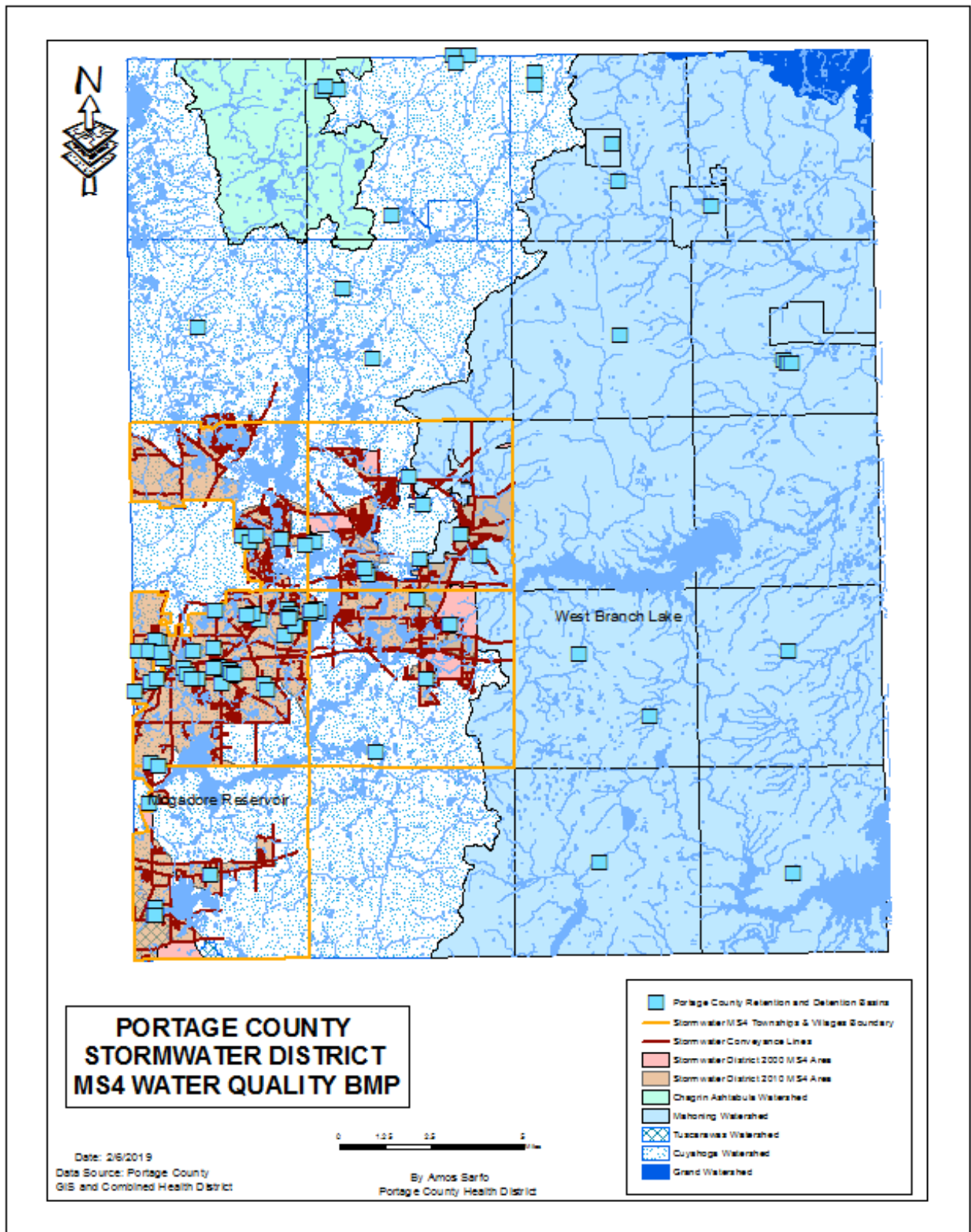
**Figure 3:** Portage County Storm Water District MS4 Catch Basin System: This map depicts Storm Water District's MS4 drainage systems catch basins and location of all state surface waters including watersheds that receive discharges from the storm water drainage system.



**Figure 4:** Portage County Storm Water District MS4 Pipe Inlet and Outlet: This map shows Storm Water District's MS4 drainage system pipes (inlet and outlet) and locations of all state surface waters including watersheds that receive discharges from the storm water drainage system.



**Figure 5:** Portage County Storm Water District MS4 Water Quality BMP: This map depicts a visual representation of the spatial locations of Storm Water District’s flood control facilities (retention and detention ponds) consisting of public and private post-construction water quality BMPs and locations of all state surface waters including watersheds.



## **2018 Storm Water IDDE Screening and Mapping**

In 2018, PCHD Storm Water Program staff reviewed all previously created storm water system GIS maps to facilitate IDDE activities. Utilizing the storm water system GIS maps, PCHD Storm Water staff inspected, verified, and dry weather screened all the outfall points in the MS4 communities. Any new storm water outfall points found during the verification were identified and captured with hand-held GPS units for mapping. The objective of the IDDE screening and mapping was to facilitate prevention of illicit discharges, including illegal dumping into Portage County storm sewer drainage system, and to implement appropriate enforcement procedures and actions to prevent contamination of the waters of the state.

## **MS4 Outfall Points Verification and Assessment**

In 2018, all the outfall points in the MS4 areas were inspected, verified, and dry weather screened; and three (3) new outfall points were identified within the MS4 areas, captured with hand-held GPS, and dry weather screened. Only two of the outfall points located within the MS4 areas dry weather screened were found to be illicitly discharging grey water. Notices of violations were issued to the homeowners, who have since repaired and eliminated the public health nuisance.

## **Total Maximum Daily Load (TMDL)**

The TMDL program, established under Section 303(d) of the Clean Water Act, focuses on identifying and restoring polluted rivers, streams, lakes and other surface water bodies. TMDL is the maximum amount of pollutant a water body can contain and still maintain water quality. Once impaired waters are identified the state must act to improve their quality, but if waters reach attainment by other means, a TMDL becomes unnecessary. OEPA currently requires holders of MS4 storm water permit to address TMDL as part of the six minimum control measures. PCHD uses Portage County Storm Water District's illicit discharge detection and elimination (IDDE) best management plan (BMP) to address TMDL issues resulting from HSTS illicit discharge of total suspended solids (TSS), biological oxygen demand (BOD5), phosphorus, nitrogen and ammonia.

In 2018, 43 illicit discharging HSTSs were successfully eliminated from the MS4 communities through replacement and sewer connections. Using OEPA's Ohio Septic Nutrient Conversion Sheet Template, it is estimated that 3390.1 lbs total suspended solids (TSS), 6610.7 lbs biological oxygen demand (BOD5), 706.3 lbs phosphorus, 1864.6 lbs nitrogen, and 1412.6 lbs ammonia that would have entered the waters of the state were removed to reduce pollution of waters of the state. Dealing with TMDL issues helped enormously in removing critical contamination from the watersheds and drinking water reservoirs in the county.

## Facility Planning and Prioritization

### Priority Area Facility Planning Activities

In 2018, PCHD Storm Water Program continued to collaborate with the Portage County Water Resources (PCWR) on bi-monthly basis to discuss the following issues that affect the whole county, but most importantly the MS4 areas:

- Identification of potential areas within the Storm Water District that may have high concentrations of failing HSTSs due to age and small lot sizes
- Prioritization of current sanitary sewer projects in the county
- Identification and prioritization of funding and economic impacts for HSTS repairs and/or replacement or sanitary sewer projects
- Revision, proposed updates, and changes to the Northeast Ohio Four County Regional Planning and Development Organization (NEFCO) 208 Water Quality Management Plan map

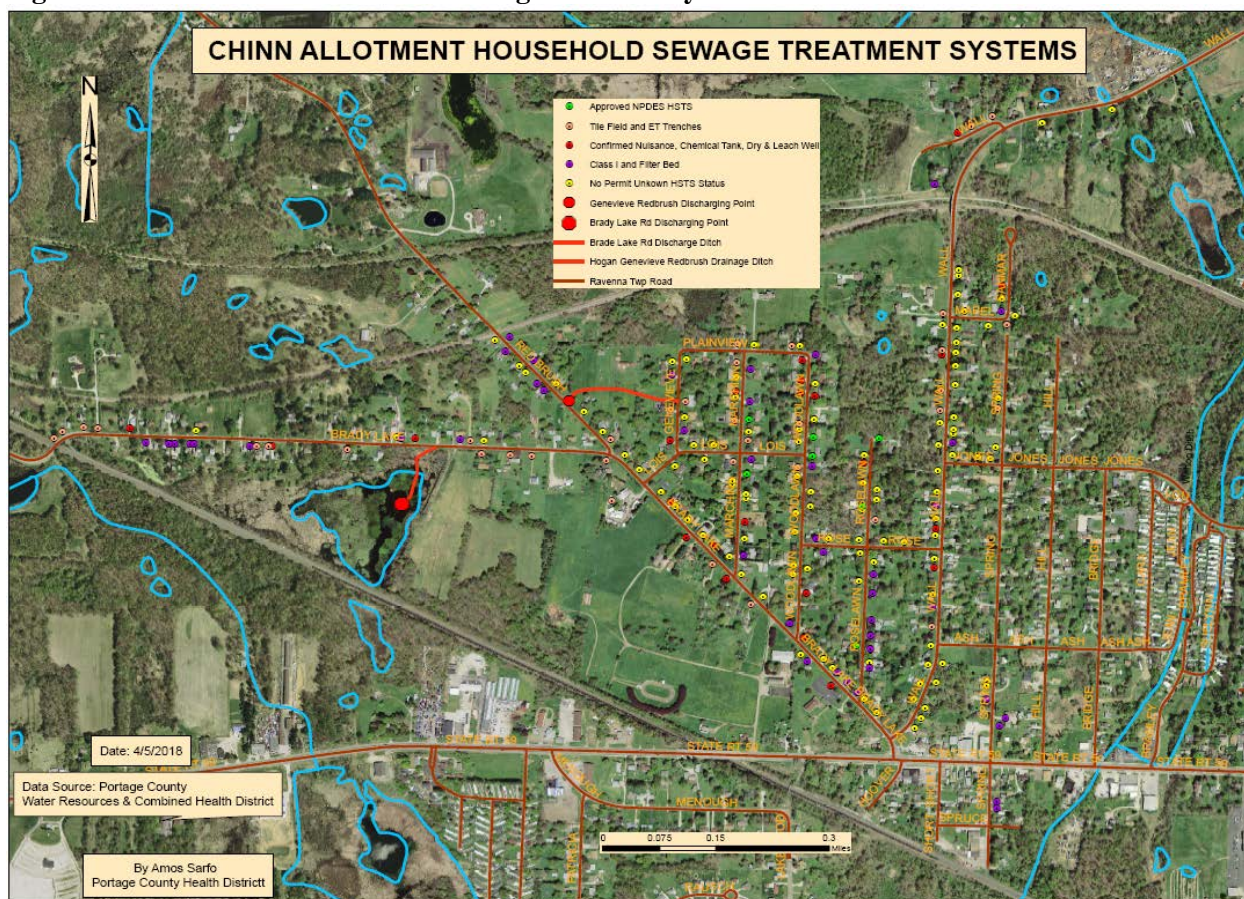
These proactive area-wide planning activities focus attention on public investments in wastewater treatment facilities and the elimination of point source water pollution aimed at achieving preventable surface water contamination and sustainable water quality.

This collaboration is yielding positive results and helps focus attention in the following areas that have concentrated numbers of illicit discharging household sewage treatment systems:

- In Brimfield Township, the only remaining failing HSTS on Lynwood Drive neighborhood pending due to WPCLF application process.
- Under the supervision of PCWR, all the ground and technical work including, but not limited to, a public forum to discuss design plans, cost, duration and funding of the project were completed to allow the construction of public sanitary sewer in the Oakwood Acres neighborhood in Brimfield to start.
- In Ravenna Township, we are still pursuing the elimination of a public health nuisance conditions emanating from Bryn Mawr Street and Seabury Drive caused by HSTSs. PCHD has escalated enforcement, which has risen to the level of negotiations between the PCHD prosecuting attorney and the attorney representing the homeowners.
- In Ravenna Township, a public forum was held with Township Trustees, Water Resources Department, BOC, OEPA, and homeowners concerning the nuisance condition in the Chinn Allotment and its elimination. All stakeholders were informed about the expected nuisance declaration pending findings and orders from OEPA requiring execution of public sanitary project in the neighborhood to eliminate the nuisance. Portage County Commissioners are taking a pro-active stand by asking Portage County Water Resources Department to start the proposal for a sewer project for the neighborhood. The GIS map below in Figure 6 is a visual representation of the Chinn Allotment neighborhood, and status of existing HSTSs.



**Figure 6: Chinn Allotment household sewage treatment systems**



## 2018 Countywide Storm Water IDDE Activities

Portage County storm water program is intentionally designed to extend beyond MS4 communities of the county. This countywide program, which encompasses MS4 and non-MS4 unregulated communities has storm water best management plan to detect and eliminate storm water illicit discharges across the county. The only exclusions are political jurisdictions such as Aurora, Kent, Ravenna, and Streetsboro that have their own storm water programs or some small communities that have applied and received exemption from OEPA.

Similar to previous years, in 2018, the county's storm water program best management practices were employed to achieve its' storm water IDDE goals. PCHD conducted countywide IDDE activities including outfall verification, dry weather screening, investigations of illicit discharge complaints emanating from HSTSs, businesses, manufacturing, and industry. Any industrial, manufacturing, or man-made discharges not pertaining to HSTS found were referred to the appropriate agency in charge for investigation and enforcement to eliminate the specific violation.

## Countywide Storm Water Outfall and Illicit Discharge Management Maps

In 2018, using *ESRI* Geographical Information System (GIS) software, Storm Water Program staff updated existing maps created in previous years, such as the visual representation of storm water outfall points in Figure 8 below, and the map of suspected illicit discharge management activities in Figure 9. These storm water maps that have received continuous updates annually since 2011 are used as part of Portage County's storm water management plan to achieve the objectives of the storm water minimum control measure #3, which requires the identification, detection, and elimination of illicit discharges.

Over one thousand (1,000) suspected or confirmed illicit discharges have been eliminated since 2010. These suspected or confirmed illicit discharges include discharging HSTSs replaced, repaired, or connected to public sanitary sewer in the county between 2010 and 2018. Most of these replacements, repairs, or public sanitary sewer connections occurred largely because of storm water program's IDDE and enforcement activities to improve water quality. Figures 9 and 10 below show the visual representation and distribution of illicit discharge management activities and illicit discharges eliminated respectively in the county from 2010 through 2018, which includes HSTS repairs/replacements and public sanitary sewer connections.

**Figure 7: Pictures of confirmed illicit discharges**



Figure 8: Countywide Storm Water District outfalls

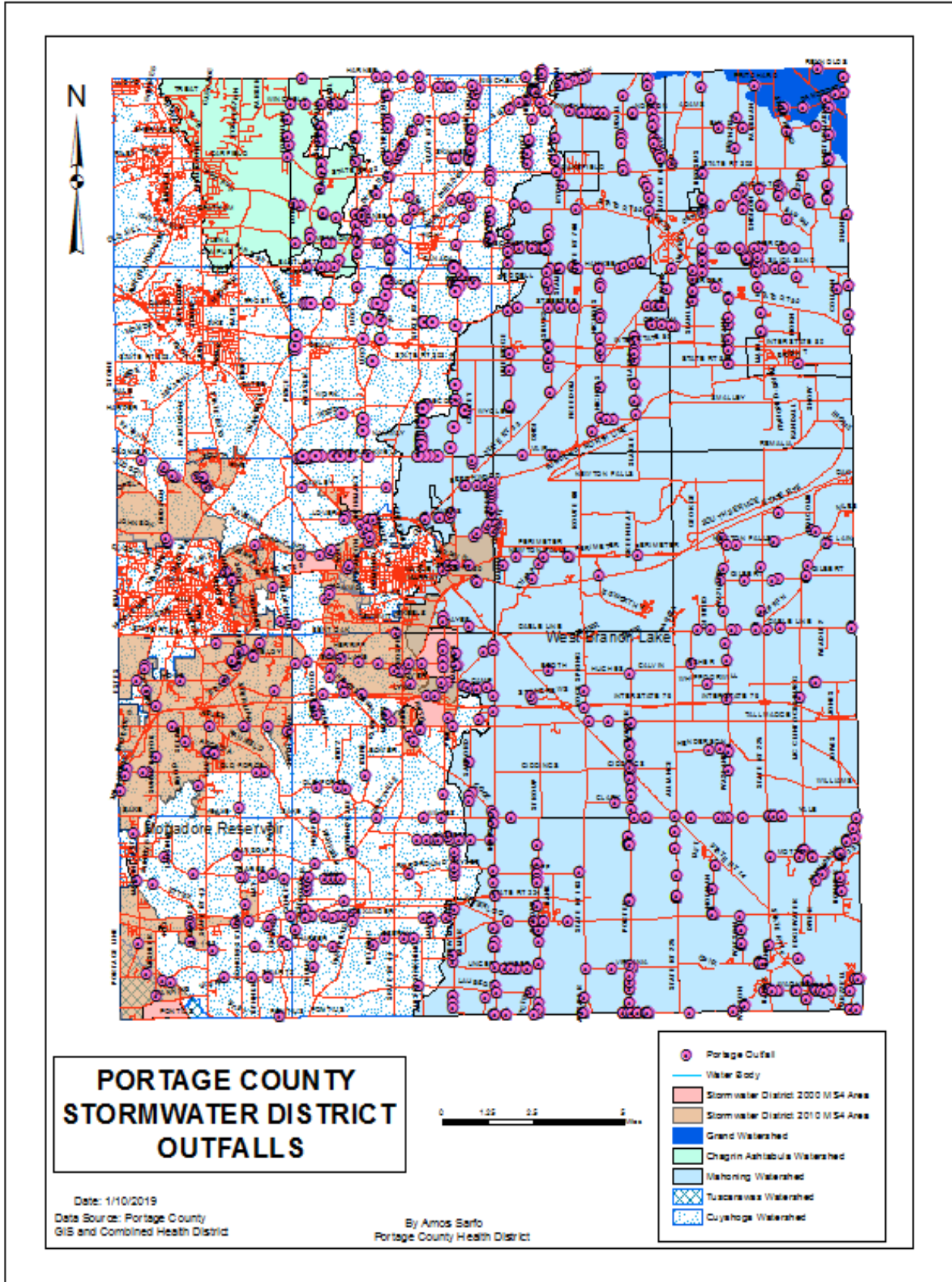


Figure 9: Portage County illicit discharge management activities

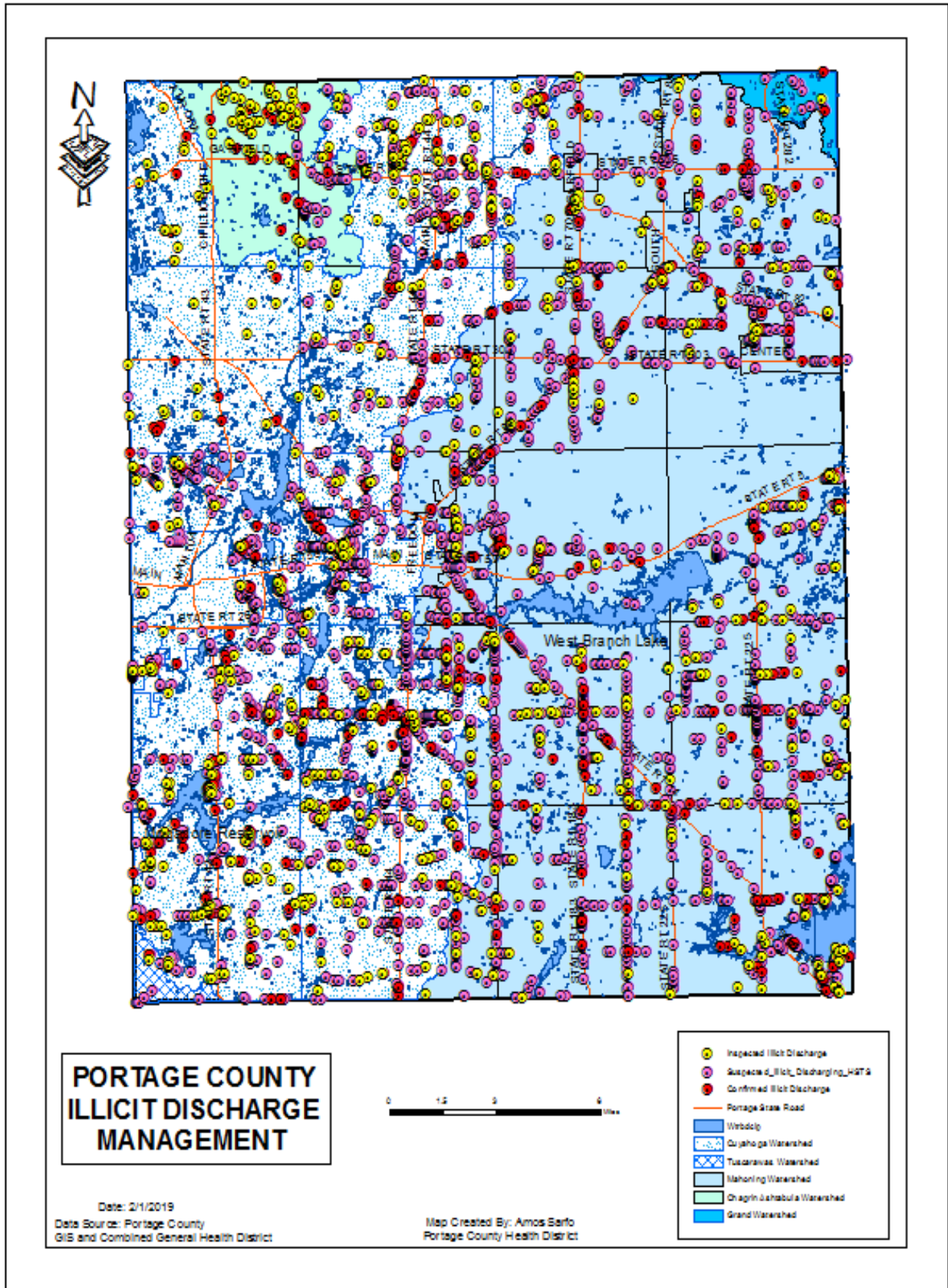
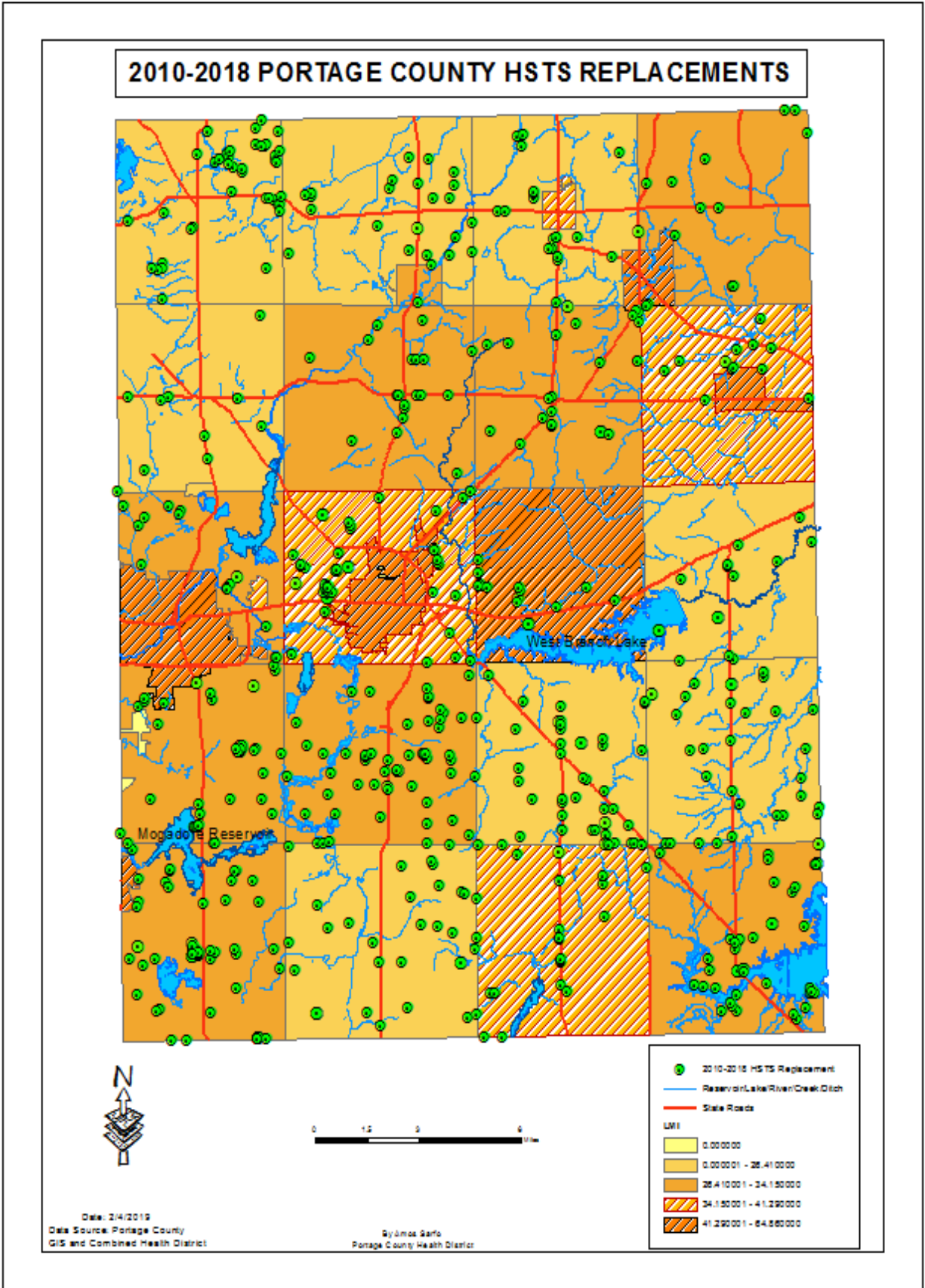


Figure 10: Spatial distribution of 2010-2018 illicit discharges elimination



## Suspected HSTS IDDE Activities

### Non-NPDES Class 1 Off-lot Discharging Aeration Inspection Activities

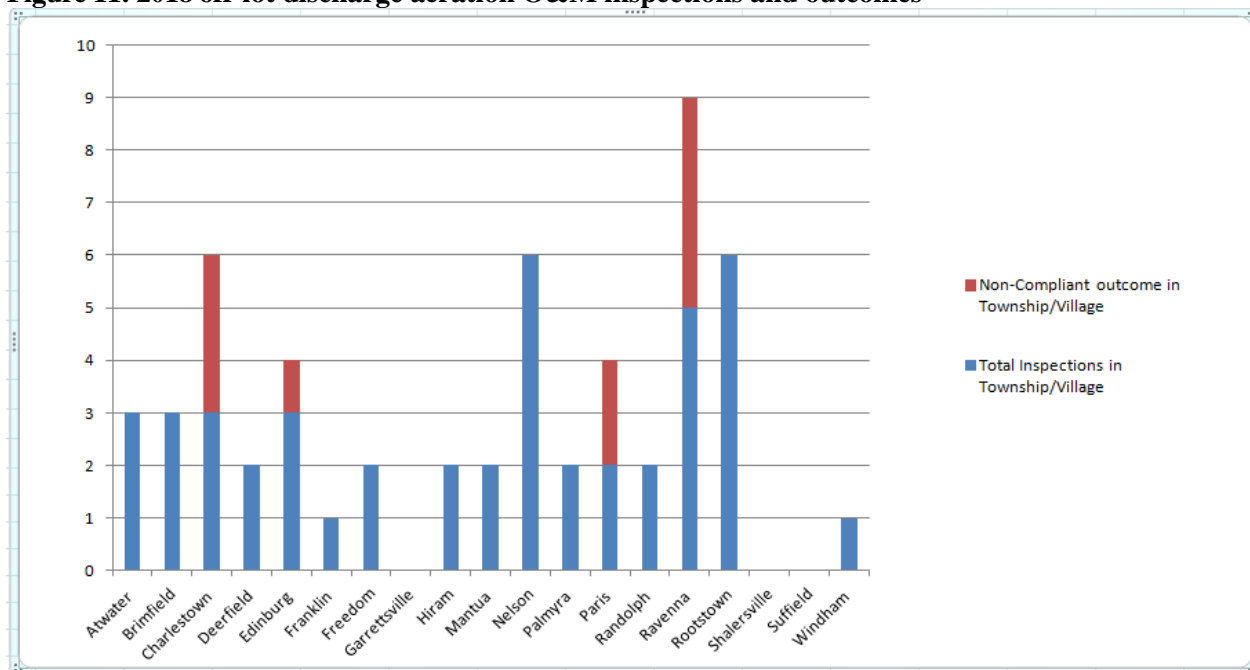
In 2018, forty-five (45) Class 1 off-lot discharging aeration HSTSs were inspected by PCHD because the homeowners failed to provide the required operation and maintenance (O&M) service contract in accordance with the Ohio Administrative Code (OAC) 3701-29 and the Health District's Supplemental Sewage Treatment System regulations. Notice of violation (NOV) and enforcement letters were sent to owners to obtain service contracts.

After the NOV and enforcement letters, thirty-five (35), 77.8% of the forty-five (45) inspected Class 1 off-lot discharging aeration systems obtained O&M service contracts, leaving ten (10), 22.2% that remained non-complaint (no service contract). Thirty days after the first letters, PCHD, in accordance with its Class 1 off-lot discharging aeration HSTSs O&M service policy, sent second NOV's and enforcement letters to the owners informing them again to obtain service contracts to avoid escalated enforcement. Table 1 provides a summary of off-lot discharging Class 1 Aeration HSTS system and the inspection results by township.

**Table 1: 2018 off-lot discharging class 1 aeration O&M inspections and outcomes**

Township	Total Inspections	Non-Compliant after 1st NOV	Status after 2nd NOV
Atwater	3	0	All Complaint
Brimfield	3	0	All Complaint
Charlestown	3	3	3 Escalated Enforcements
Deerfield	2	0	All abated
Edinburg	3	1	2 Escalated enforcements
Franklin	1	0	Abated
Freedom	2	0	Abated
Garrettsville	0	0	None
Hiram	2	0	All Complaint
Mantua	2	0	All Complaint
Nelson	6	0	All Complaint
Palmyra	2	0	All Complaint
Paris	2	2	2 Escalated enforcements
Randolph	2	0	All Complaint
Ravenna	5	4	4 Escalated enforcement
Rootstown	6	0	All Complaint
Shalersville	0	0	None
Suffield	0	0	None
Windham	1	0	Abated
<b>Total</b>	<b>45</b>	<b>10</b>	<b>10 Escalated enforcements</b>

**Figure 11: 2018 off-lot discharge aeration O&M inspections and outcomes**

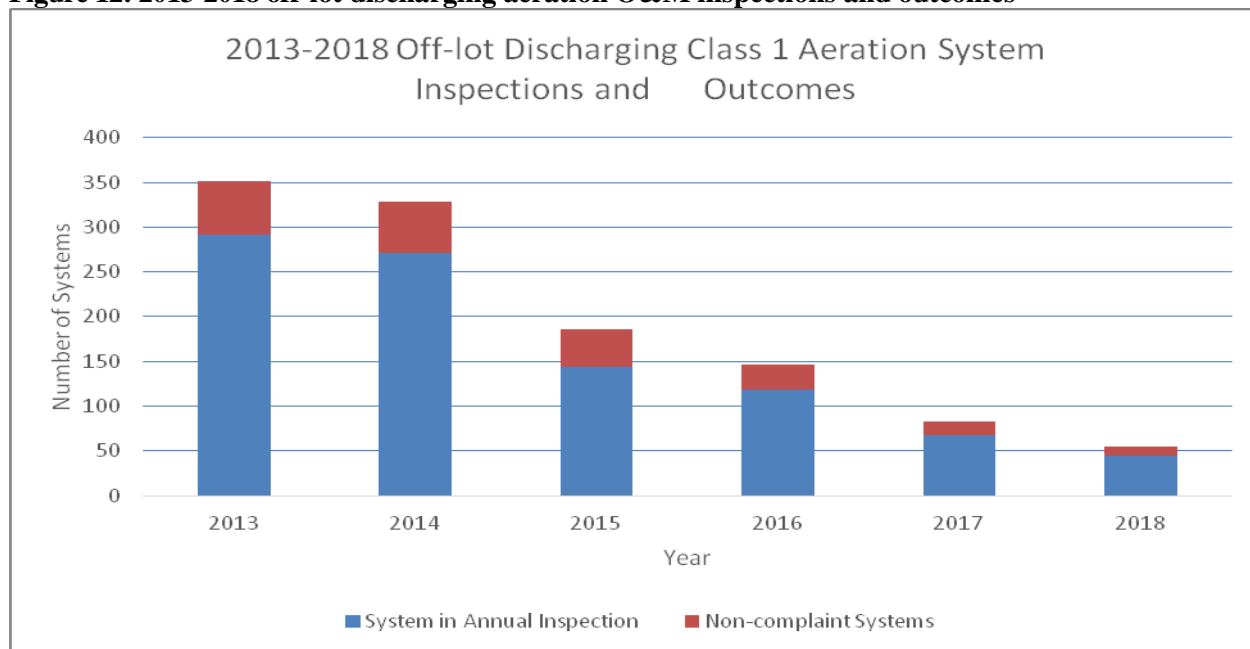


### 2013-2018 Non-NPDES Class 1 Off-Lot HSTS O&M Inspection

Since 2011, PCHD has successfully executed its non-NPDES class 1 off-lot discharging aeration HSTSs operation and maintenance (O&M) service program by getting more homeowners who have class I aeration systems to obtain service contracts and achieve compliances. This was achieved through education and enforcement. As Table 2 and Figure 12 below show, the inspections of the number of households served by class I aeration systems without O&M service contracts have steadily decreased from its peak at 291 in 2013, to its lowest level of 45 in 2018. The number of households that did not obtain O&M service contracts (remained non-complaint) after inspection and first NOV is issued have also steadily decreased from its highest level of 60 in 2013 to only 10 in 2018. This is a huge success in preventing potential illicit discharges from non-NPDES class 1 off-lot discharging aeration HSTSs from entering the waters of the state to contaminate them.

**Table 2: 2013-2018 off-lot discharging class 1 aeration O&M inspections**

Year	Total Inspections in Township/Village	Non-Compliant outcome in Township/Village
2013	291	60
2014	271	57
2015	144	42
2016	119	27
2017	67	16
2018	45	10
<b>Total</b>	937	212

**Figure 12: 2013-2018 off-lot discharging aeration O&M inspections and outcomes**

## Wastewater Nuisance Complaints

Wastewater nuisance complaints such as failing HSTS and laundry line discharge investigations are some of the most effective tools employed by PCHD for IDDE. Consequently, all nuisance complaints received are investigated promptly. With the homeowners and residents permission, HSTSs and laundry drains are dye tested or sampled to determine the validity of the complaint and determination of a public health nuisance. Figure 13 below illustrates a dye test of a malfunctioning sewage treatment system discharging to waters of the state.

**Figure 13: Dye test of illicit discharges to waters of the state during HSTS evaluation**

When HSTSs are causing a public health nuisance, the staff issues a written notice of violation (NOV). Owners are given sixty (60) days to correct these violations by making repairs and/or replacing the sewage treatment system in accordance with Chapter 3701-29 of the Ohio Administrative Code (OAC). During the investigation, the type and status of the HSTSs serving the



affected houses are documented and the geographical coordinate points of the locations of the public health nuisances captured with GPS units and uploaded into the Storm Water GIS Program database. When all reasonable attempts to achieve compliance proved futile, enforcement actions were pursued to ensure the elimination of the public health nuisance.

### Wastewater Nuisance Complaints Data Analysis

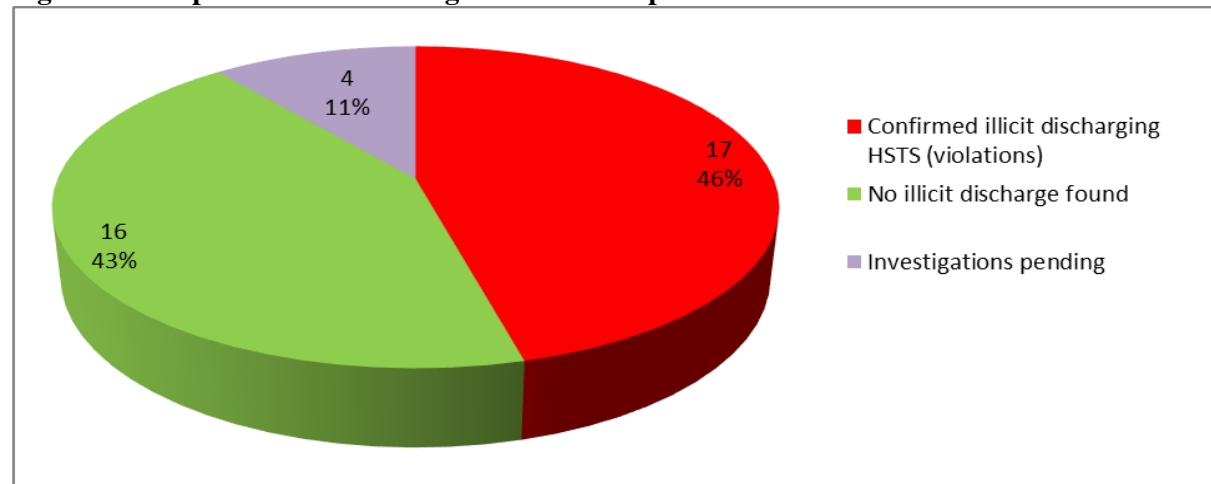
At the end of 2018, PCHD received thirty-seven (37) written wastewater complaints of which twenty (19), representing 51% of wastewater complaints received were eliminated and abated. These nuisance complaints were fairly distributed across Portage County’s townships and villages. As shown in Table 3 and Figure 14 below, the investigation of the thirty-seven (37) suspected nuisance complaints confirmed seventeen (17), representing 47.00%, were in violation. Three of these 17 violations were eliminated through two (2) replacements and one (1) repair. Sixteen (16) of the thirty-seven (37) written wastewater complaints, constituting 43.00%, were determined to be not illicitly discharging and abated. The remaining four (4) complaints, representing 10.00%, were pending investigation.

Some of the nuisance complaints could not be investigated because the complainants wanted to remain anonymous and did not continue with the process for fear of offering information they thought could potentially reveal their identity to the people they were complaining about. In these instances, complainants are provided alternatives such as contacting a public official to submit a complaint on their behalf or to contact the Ohio EPA’s northeast district office for assistance.

**Table 3: Suspected illicit discharge nuisance complaints**

	# of complaints (%)	Abatement (%)
Confirmed illicit discharging HSTS (violations)	17 (47%)	3 (18)
No illicit discharge found	16 (43%)	16 (100%)
Investigations pending	4 (10%)	0 (0%)
<b>Total</b>	<b>37 (100%)</b>	<b>19 (51%)</b>

**Figure 14: Suspected illicit discharge nuisance complaints**



## Voluntary Point-of-Sale Real Estate Transfer HSTS Inspection

Storm Water Program Staff perform real estate transfer inspections of HSTSs upon request. Real estate transfer inspections of HSTSs are effective and efficient methods of IDDE. It offers a significant compliance rate among all the programs offered to eliminate confirmed illicit HSTS discharges because the parties involved in real estate transfer transactions have vested interest to remediate the violation and eliminate the public health nuisance.

The enforcement process of illicit discharging HSTS found during property transfer HSTS inspection is the same as dealing with PCHD's public health nuisance complaint process and illicit discharges found during a routine storm water dry weather inspection. The homeowners are given sixty (60) days time limit from the date a notice of violation certified letter is received to correct violations. The homeowners are required to install an approved HSTS in accordance with the ODH sewage treatment system regulations in order to avoid escalated enforcement through court. Illicit discharges from manufacturing, businesses, or industry are sent to Ohio EPA for enforcement.

It must be noted that PCHD does not stop the sale or transfer process when a HSTS is causing a public health nuisance during a real estate transfer inspection despite the issuance of notice of violation for repair/replacement to eliminate the public health nuisance. The elimination of any public health nuisance becomes the responsibility of the new property owner if the property transfers before returning to compliance. The new homeowner must repair or replace the HSTS and bring it to compliance according to the Ohio Revised Code 3718

In 2018, twenty-seven (27) HSTS failing or prohibited systems, representing 28.42%, were identified among ninety-five (95) real estate transfer HSTS inspections received by PCHD. These failing or prohibited HSTSs were added to the nuisance complaint database. Similar to the nuisance complaint enforcement process, all failing HSTSs or prohibited systems, such as dry wells, were referred to the Storm Water Program for repair/ replacement enforcement in accordance with ORC 3718 and OAC 3701-29 Sewage Treatment System regulations. Out of the twenty-seven 27 failing HSTS found during real estate point of sale inspections, sixteen (16), representing 59% were fixed to achieve compliance.

## Countywide Non-MS4 Outfall Points Verification & Assessment

As stated earlier Portage County storm water program is intentionally designed to extend beyond MS4 communities of the county. The Storm Water staff successfully verified all the storm water outfalls in the storm water database including 476 outfall points in non-MS4 communities across the county that were verified during 2018. Of the 476 (100.00%), 0 outfalls were eliminated.

**Table 4: Countywide verification of non-MS4 mapped storm water outfalls**

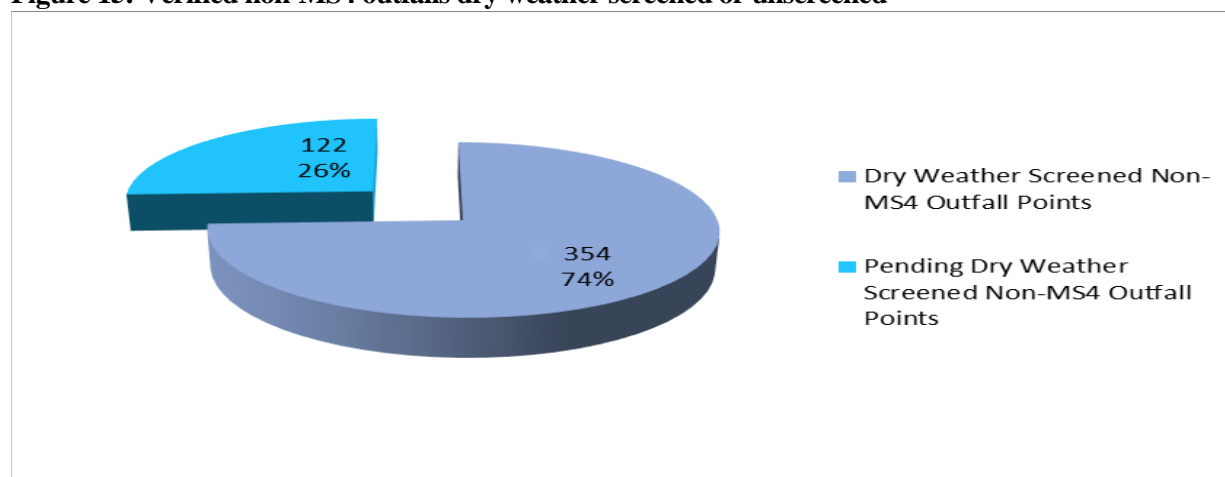
<b>Non-MS4 Mapped Storm Water District Data</b>	<b>Inspection Outcome (%)</b>
Eliminated Mapped Non-MS4 Outfall Points	0 (0%)
Acceptable Mapped Non-MS4 Outfall Points	476 (100%)
Total Verified Non-MS4 Outfall Points	476 (100%)

As shown below in Table 5 and Figure 15, of the 476 (100.00%) points, 354 (74.37%) of them were dry weather screened and 122 (25.63%) non-MS4 communities' mapped outfalls are pending dry weather screening due to weather limitations.

**Table 5: Verified non-MS4 outfalls dry weather screened or unscreened**

Storm Water Non-MS4 District Data	Total screened (%)	Illicit Discharges (%)
Screened Non-MS4 Outfall Points	354 (74.3%)	74.37%
Unscreened Non-MS4 Outfall Points	122 (25.63%)	25.63%
Verified Non-MS4 Outfall Points	476 (100%)	100.00%

**Figure 15: Verified non-MS4 outfalls dry weather screened or unscreened**

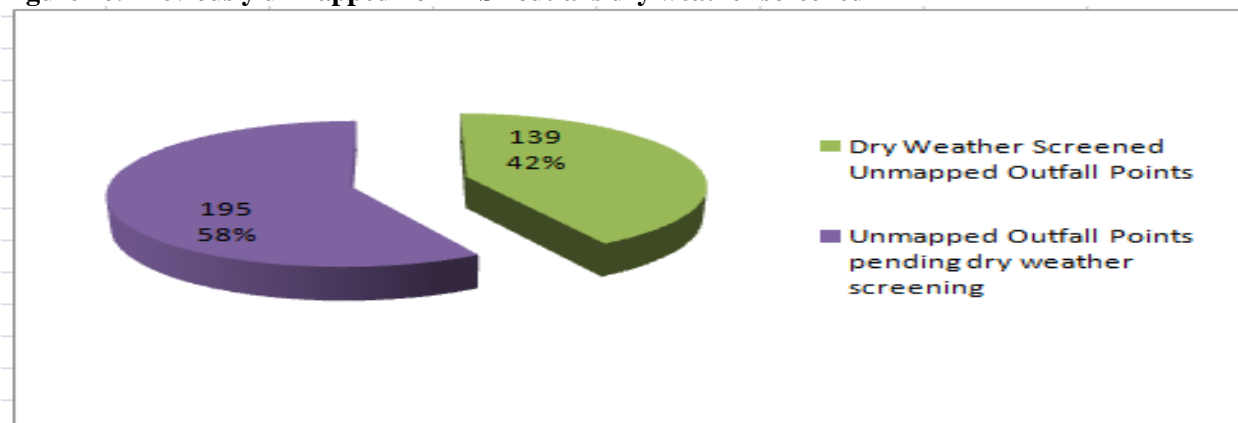


### Additional Non-MS4 Outfall Points Identified and Assessed During Inspections

The Storm Water Staff also identified and mapped an additional 334 non-MS4 outfall points that were found during outfall verification process that were not included in the Storm Water District's database previously. Of the 334 additional outfall points, 139 (41.62%) were screened, and 195 (58.38%) outfalls are pending dry weather screening due to weather limitations. This information is detailed in Table 6 and Figure 16 below. The remaining 195 outfall points pending screening will be dry weather screened before the end of the permit term in 2019.

**Table 6: Previously unmapped non-MS4 outfalls dry weather screened**

Additional Unmapped Points Identified In MS4 and Non-MS4 Areas		
Dry Weather Screened Unmapped Outfall Points	139	41.62%
Unmapped Outfall Points pending dry weather screening	195	58.38%
Total additional Unmapped Outfall Points	334	100.00%

**Figure 16: Previously unmapped non-MS4 outfalls dry weather screened**

### **Illicit Discharge Identified During Dry Weather Screening in Non-MS4 Areas**

Among all the outfalls dry weather screened in the non-MS4 communities in the countywide storm water district, nine (9) illicit discharges were found. These consisted of eight (8) HSTS failing systems and one (1) grey water discharge identified to be causing public health nuisance. Through PCHD's enforcement, three (3) of the eight (8) failing HSTSs have been replaced or repaired and brought to compliance. The remaining five (5) are still pending for WPCLF grant application approval.

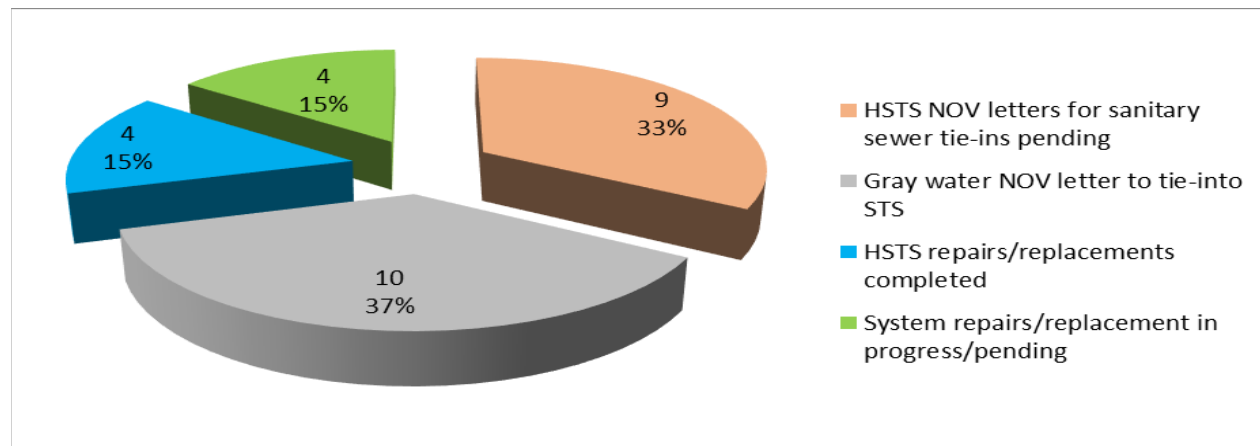
### **Status of Illicit Discharge Elimination Enforcement Activities**

In 2018, Portage County Storm Water Program staff issued twenty-seven (27) illicit discharge elimination Notices of Violation (NOV) and fourteen (14), representing 52% were successfully eliminated to achieve compliance as summarized in Table 7 and graphically represented in Figure 17 below:

- PCHD issued enforcement letters to nine (9) homeowners, 33.00% of the 27 illicit discharges identified as malfunctioning HSTS that were required to connect to sanitary sewer
- Ten (10), 37.00%, were concerned with gray water (laundry) that redirected the wastewater to the STS
- Four (4), 15.00%, made the required repairs to or the replacement of the STS systems
- Four (4), representing 15.00%, are in the process to complete the STS repair and/or replacement procedure

**Table 7: Notices of violations enforcement status**

HSTS NOV letters for sanitary sewer tie-ins pending	9	33.00%
Gray water NOV letter to tie-into STS	10	37.00%
HSTS repairs/replacements completed	4	15.00%
System repairs/replacement in progress/pending	4	15.00%
<b>Total repair/replacement orders</b>	<b>27</b>	<b>100.00%</b>

**Figure 17: Notices of violations enforcement status**

### Additional Illicit Discharge Elimination Enforcement Activities

In 2018, Portage County Stormwater Program staff expanded their IDDE scope of operation to capture illicit discharges from recreational licensed swimming pools. Emily Speck collaborated with Justin Rechichar, Program Supervisor, to identify, detect, and eliminate illicit discharges from public swimming pools. This was done by ensuring pool wastewater from backwash operations is disposed of properly.

PCHD licensed sixty-eight (68) public swimming pools during the year. Of the sixty-eight (68) pools, three (3) of the licensed facilities were found to be illicitly discharging. One (1) of the three (3) have been corrected while the others are pending due to being closed for the season. These remaining facilities will be repaired prior to operation in 2019.

## Financial Assistance for Illicit Discharges Elimination

### Financial Assistance for the Repair/Replacement of Failing HSTS

PCHD is mindful of the substantial cost to replace a household sewage treatment system with a NPDES approved off-lot discharging aeration system at approximately \$10,000 - \$12,000, a conventional on-lot trench system at ~ \$12,000 - \$15,000 and a drip system at approximately \$18,000 - \$20,000; and thus, the financial difficulty for property owners to comply with a notice of violation and eliminate the public health nuisance.

Based on the enormity of the financial needs for illicit discharge elimination in the county, the Storm Water Program is constantly looking for new funding sources to broaden the base of the financial assistance for our homeowners for septic replacement, repair, and sewer connection. The PCHD Storm Water Program staff continue to collaborate with the Portage County Board of Commissioners, Portage County Regional Planning Commission (PCRPC), Neighborhood Development Services (NDS), Community Action Council, and the United States Department of Agriculture (USDA), to assess possible funding sources for: 1) HSTS repair or replacement, 2) connection into an existing sanitary sewer and 3) construction of new sewer projects.

Homeowners who could not afford the replacement or repair are referred to the above-mentioned institutions for possible funding assistance. However, financial assistance from these institutions are not guaranteed and only offered when funds are available. Qualification for such financial assistance is based on economic and federal income guidelines. Applicants must meet certain conditions determined by the individual funding organization. Available financial support to qualified applicants is disbursed on first-come, first-served basis.

### Water Pollution Control Loan Fund (WPCLF) Program

The Ohio Environmental Protection Agency (EPA) Water Pollution Control Loan Fund (WPCLF) program is a principal forgiveness fund to assist low to moderate income qualifying homeowners who meet the guidelines for funding on first come first serve basis. The Storm Water Program, with the support of our stakeholders, have applied for and received a total of \$9500,000 of the 2016 grant. WPCLF grant over the permitting period from 2015 to 2019 as distributed below:

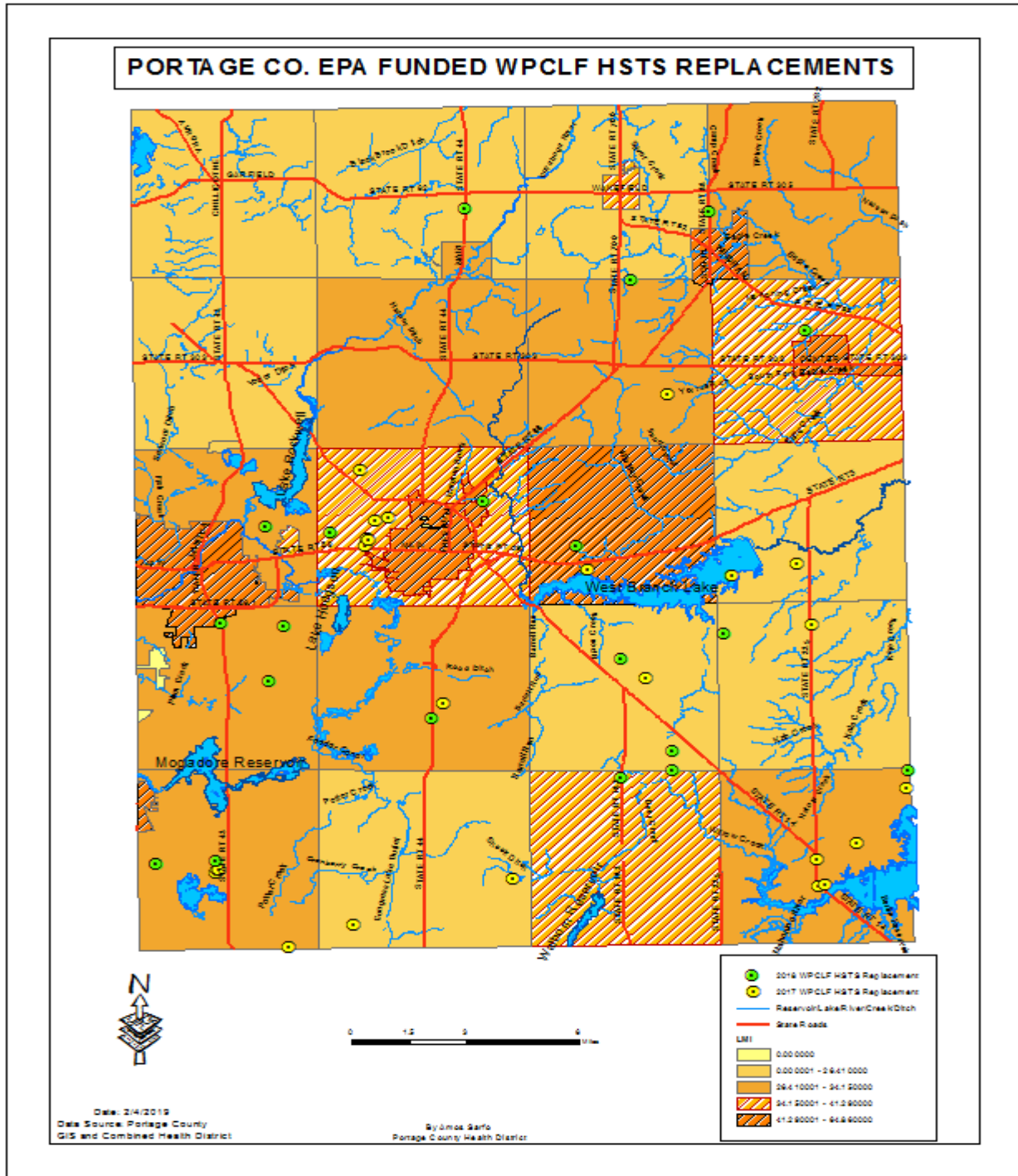
- Received \$300,000 of 2016 grant
- Received \$300,000 of 2017 grant
- Received \$200,000 of 2018 grant
- Received \$150,000 of 2019 grant

The disbursement of the \$300,000 grant received in 2016 was completed in 2017 over an eighteen month period. It helped low to moderate income homeowners to repair or replace 24 HSTSs in the county. Following the successful application for the 2016 grant, PCHD once again submitted an application and received \$300,000 for 2017. Using these funds 20 HSTSs were replaced and 3 additional HSTSs were connected to sanitary sewer in 2018. The \$200,00 received from the 2018 grant year will be disbursed in 2019. PCHD successfully applied for the grant one more time in 2018

and received \$150,000 for 2019 disbursement year. The OEPA has made one change to the program that allows Portage County to utilize up to 50% of the funds to assist low-to-moderate owner-occupied properties with a sewer connection beginning 2018 and subsequent disbursement years.

A map of 2017 and 2018 Ohio EPA WPCLF HSTS replacements and sewer connections created for this report is shown in Figure 18 below. This map shows the geographical location of the HSTS replacements and sewer connections in low to moderate income areas across the county. These replacements reduce HSTS discharges into the waters of the state and improve water quality.

**Figure 18: 2017 and 2018 WPCLF HSTS Replacements**



## Storm Water Education and Outreach Activities

### Community Outreach

In 2018, Storm Water staff attended public forums and meetings to provide educational information to our stakeholders to inform them of efforts to minimize water pollution from storm water discharges and achieve sustainable water quality in accordance with the EPA's Clean Water Act.

PCHD strives to bring to the attention of public employees, business and the general public the hazards associated with illegal discharges and improper disposal waste that could potentially contaminate surface and groundwater. Storm Water Program staff extended our education and outreach program to township trustees and roads department representatives during quarterly Task Force and Township Association Meetings.

### Education and Information Brochure

Storm Water Program staff offered information and education on HSTS operation and maintenance, evaluation of HSTS, repairs/replacement of HSTS, and prevention of storm water contamination via phone, email, office, field consultation, meetings/trainings, and public events throughout the year.

Multiple methods to provide educational outreach were utilized. Storm Water brochures, flyers, and posters were created and provided to Portage County residents to explain the importance of proper maintenance of a HSTS, an offer information on myths and facts about HSTSs. These educational materials were provided to homeowners during field inspections, health fairs around the county, and at the PCHD education trailer during the Portage County Randolph Fair.

During the Portage County Randolph Fair, PCHD declared Wednesday, August 22, 2018 Water Safety Day. An education prize wheel was used during that day, to ask participants questions about water safety practices. This proved to be a fun way to engage both children and adults and to provide education on storm water contamination, prevention, and promotion of sustainable water quality.

PCHD partnered with Portage County Soil and Water Conservation District and NEOPIPE on various water safety campaigns:

- Don't Drip and Drive (poster)
- Correct amount and utilization of salt for ice removal (provided measurement cups)
- Don't Flush Tampons (poster)

Find below in Figure 19 is a copy of the "Don't Flush Tampons" educational poster for water contamination prevention.




Figure 19: "Don't Flush Tampons" educational poster

# So awkward, but seriously... don't flush tampons down the toilet.

PLASTIC IS MADE OF TOXINS


BAD FOR THE WATER • BAD FOR US •

Instagram



100 Likes  
Tampons belong in the trash. #tamponplution #plasticintheenvironment #tamponisnotbiodegradable

PLASTIC DOESN'T GO AWAY.



UNFORTUNATELY, A LOT OF PLASTIC PEOPLE THROW AWAY, ENDS UP IN OUR RIVERS AND LAKES WHERE IT CONTINUALLY BREAKS DOWN INTO SMALLER PIECES CALLED MICROPLASTICS.

THIS IS THE SCARY STUFF!


TOXIC MICROPLASTICS ARE SMALL ENOUGH TO BE INGESTED BY FISH THAT END UP ON OUR DINNER PLATE.

39.13 MILLION

WOMEN IN THE U.S. USED TAMPONS IN 2018.  
THAT'S A LOT OF PLASTIC!




54%

OF THE 120 MARINE MAMMALS ON THE THREATENED SPECIES LIST HAVE BEEN SEEN CAUGHT IN OR FOUND INGESTING PLASTIC.






WHAT CAN YOU DO TO HELP?

DONT FLUSH PLASTIC!

FLUSH ONLY THE 3 P'S: PEE, POOP AND PAPER

For more information contact:

Portage County Health District • 330.296.9919

Portage Soil and Water Conservation District • 330.297.7633

Portage County Water Resources • 330.296.2066

## Evaluation of 2011-2018 Suspected Illicit Discharge Inspection and Status

Table 8 below shows a summary of the review of annual inspections of suspected illicit discharging HSTS in PCHD database from 2011 through 2018. This table and the associated graphs below in Figures 20-23 show the tabulation and graphical representation of the trends and patterns in cumulative total numbers of:

- Suspected illicit discharges inspected
- Suspected illicit discharges determined to be NOT illicit discharging
- Suspected illicit discharges confirmed to be illicit discharging
- Confirmed illicit discharges eliminated
- Confirmed illicit discharges still pending replacement/repair/sewer connection

**Table 8: 2011-2018 countywide suspected illicit discharging inspections and status**

Year	Total Suspected Illicit Discharges Inspected	Total NOT Illicit Discharge	Total Confirmed Illicit Discharge	Total Confirmed Illicit Discharge Eliminated	Total Confirmed Illicit Discharges Pending Repair/Replacement
2011	143	80	63	22	41
2012	182	98	84	25	59
2013	192	88	104	37	67
2014	233	85	148	49	99
2015	260	87	173	71	102
2016	292	87	205	114	93
2017	319	84	235	157	78
2018	355	81	274	190	84

The analysis and evaluation of the suspected illicit discharge database from 2011 through 2018 shown in Table 1 divulges the following trends and patterns:

- The total number of suspected illicit discharge inspections increased from 143 in 2011 to a cumulative total of 355 in 2018. This represents 148% cumulative increase in suspected illicit discharge inspections.
- The cumulative total number of suspected illicit discharges determined NOT to be illicit discharges during the same period was between 80 and 98. These illicit discharges determined NOT to be illicit discharging decreased from its highest level at 98 in 2012 to 81 in 2018. Additionally, the graph in Figure 22 shows that since 2011, the proportion of total number of illicit discharges determined NOT to be illicit discharging among all suspected illicit discharges being investigated has decreased 59%.

Figure 20: 2011-2018 suspected illicit discharging inspection and status

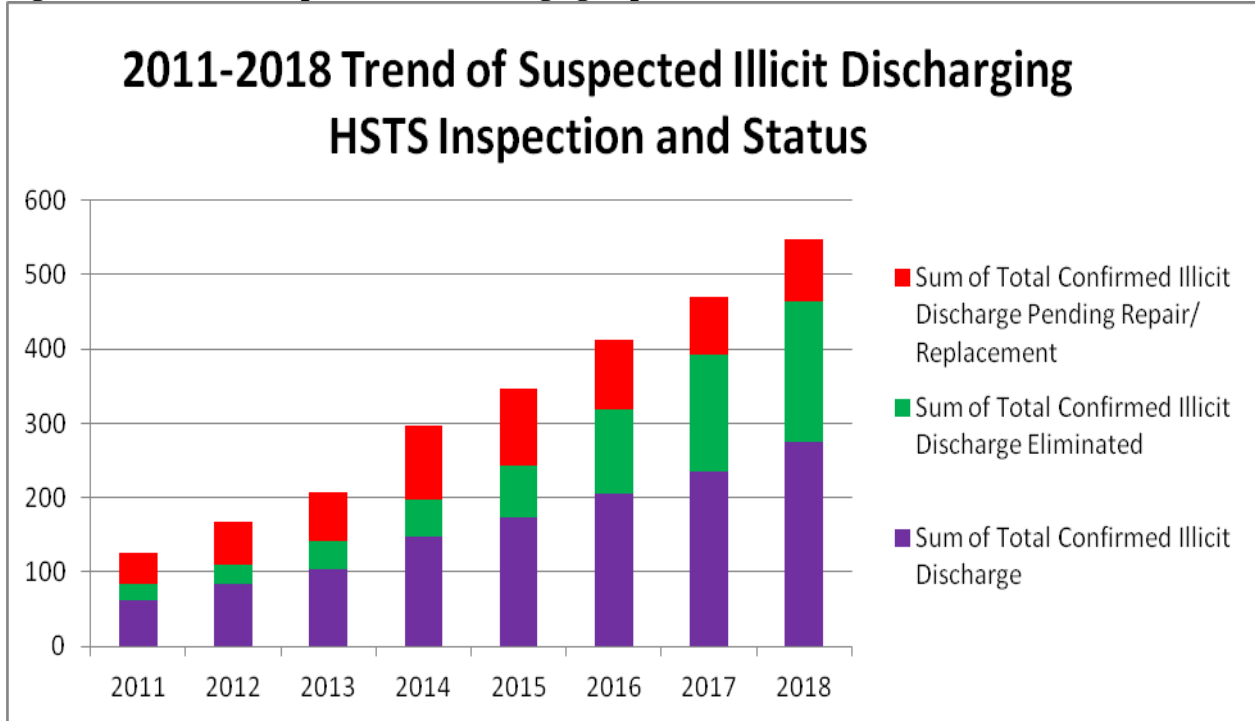
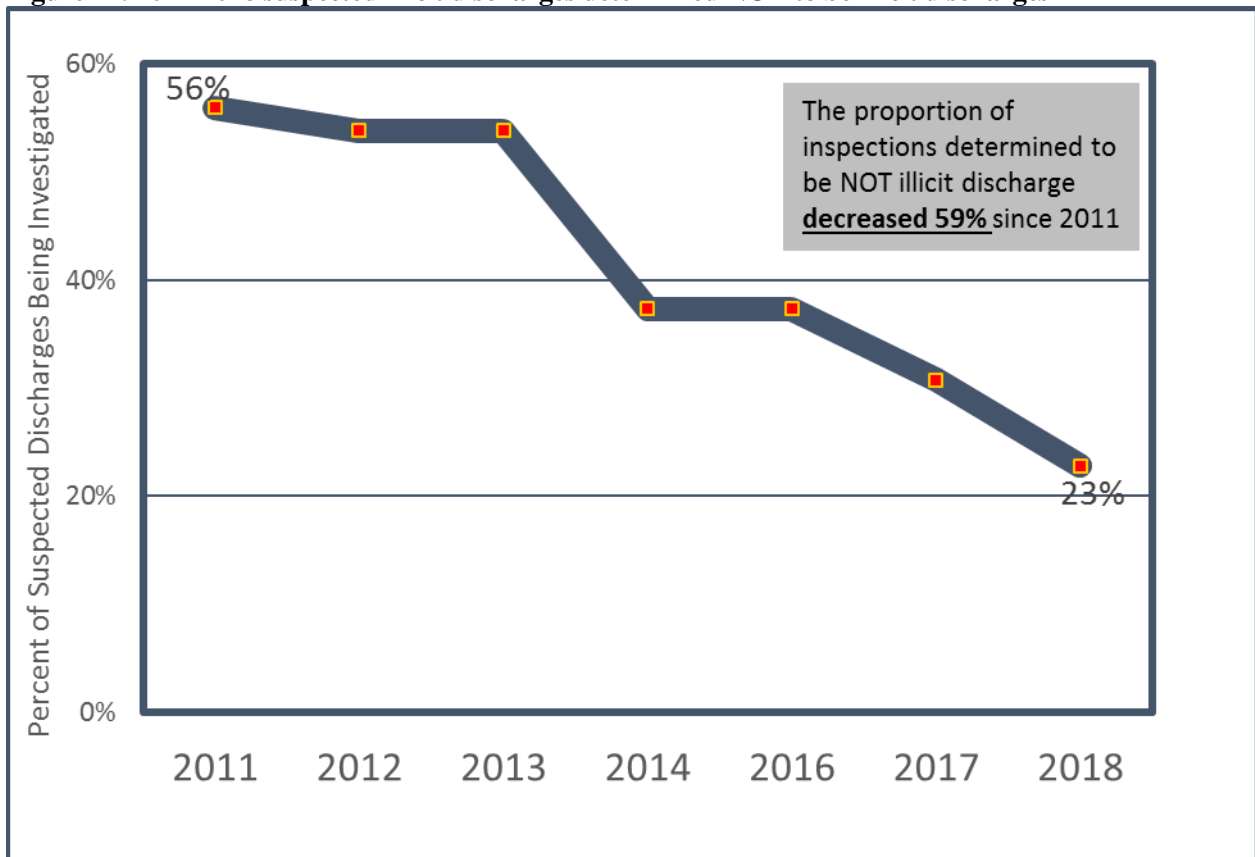
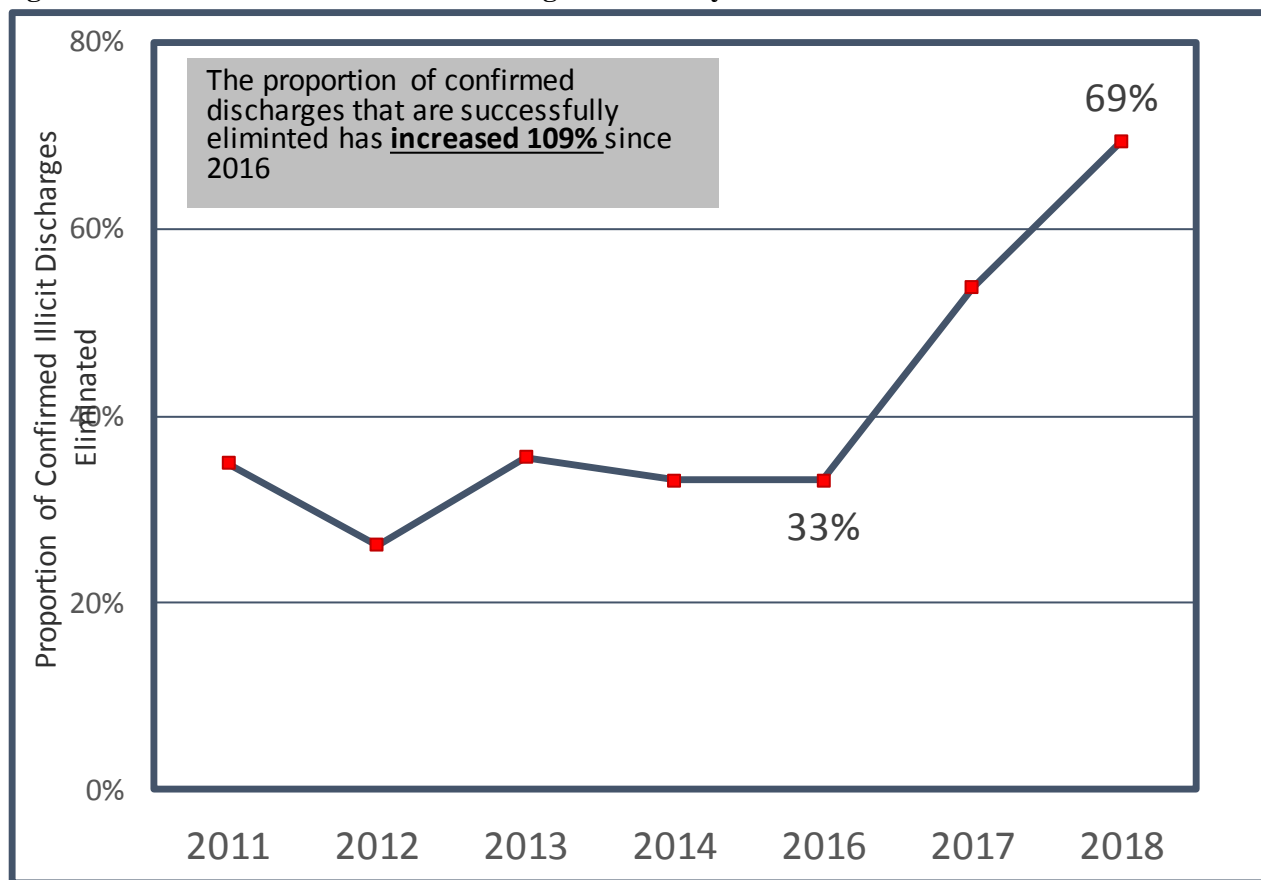


Figure 21: 2011-2018 suspected illicit discharges determined NOT to be illicit discharges



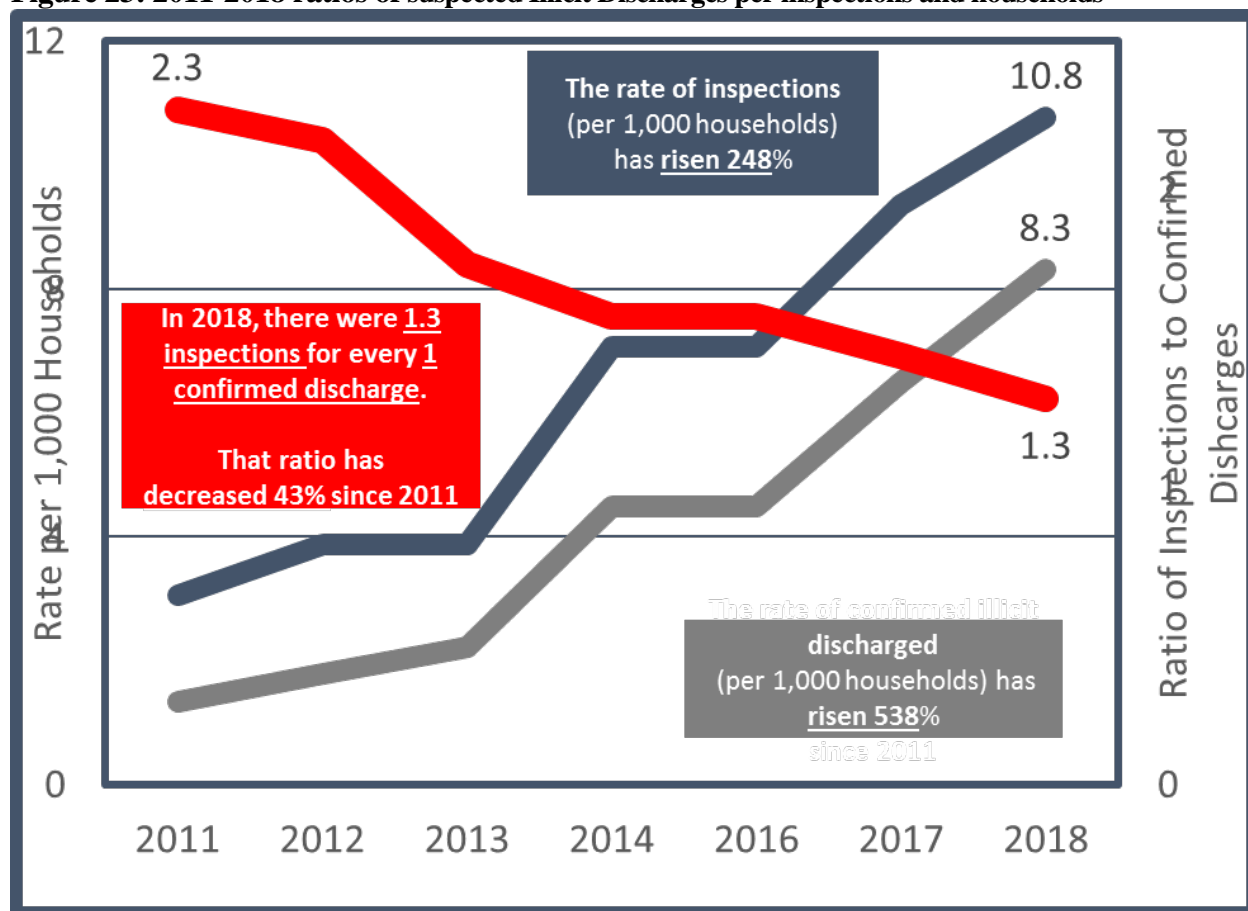
- The number of confirmed illicit discharges has increased from its lowest level at 63 in 2011 to a cumulative total of 274 in 2018. This represents about 335% cumulative increase in confirmed illicit discharge.
- The total number of confirmed illicit discharges that were successfully eliminated increased from 22 in 2011 to 190 in 2018 as shown in Table 8. This represents almost 764% cumulative increase of confirmed illicit discharge eliminations. Additionally, as shown by the graph in Figure 21, the proportion of confirmed illicit discharges that are successfully eliminated among all confirmed illicit discharges identified has increased 109% since 2016.

**Figure 22: 2011-2018 confirmed illicit discharges successfully eliminated**



- The cumulative total confirmed illicit discharges pending repair or replacement increased from 41 in 2011 to its highest level of 102 in 2015, representing almost 148% cumulative increase. This peak level has since decreased to 84 in 2018 representing 21% cumulative decrease between 2015 and 2018.
- Additionally, the evaluation of suspected illicit discharges rate (per 1,000 households) and ratio of inspections and confirmations from 2011 to 2018 as shown in Figure 23 indicates that the rate of inspections per 1,000 households among the Portage County Storm Water Health District's households has risen 248% since 2011. Furthermore, the rate of confirmed illicit discharges (per 1,000 households) has risen 538% in the same time period. Finally, the evaluation determined that in 2018, there were 1.3 inspections for every 1 confirmed discharge.

**Figure 23: 2011-2018 ratios of suspected Illicit Discharges per inspections and households**



## Conclusion

In 2018, PCHD Storm Water Program was very successful in implementing the Municipal Small Storm Sewer System (MS4) program IDDE in the MS4 communities as well as across the countywide storm water district with the support and collaboration of county agencies, townships, villages, and other storm water program stakeholders. The Storm Water Program, with the support of our stakeholders successfully applied for and received \$200,000 of 2018 WPCLF grant. Additionally, in 2018, PCHD successfully disbursed the \$300,000 grant received in 2017. Through the Storm Water Program specifically, PCHD was able to eliminate 87 public health nuisances, 43 of these were failing HSTS. These included 23 failing systems repaired, replaced, or connected to public sanitary sewer systems in low to moderate income communities. This was made possible with the \$300,000 from the 2017 WPCLF grant disbursed in 2018 and County Commissioners financial support, which helped to reduce the amount of wastewater pollutants that would have entered the waters of the state.

Furthermore, PCHD successfully completed all its MS4 outfall verifications, dry-weather screening, and nuisance complaint inspection goals. The evaluation of illicit discharge inspections from 2011 to 2018 shows that PCHD was able to increase its illicit discharging investigation activities, notices of

violations and enforcements. Overall, it can be concluded from the evaluation that as inspections increased, the number of illicit discharges successfully eliminated also increased, which helped to eliminate more nutrients from entering the waters of the state.

Overall, the Storm Water Program continues to be one of the most effective and efficient environmental programs for illicit discharge detection and elimination of waste water from non-storm water sources, such as HSTS, to prevent surface water pollution aimed at achieving sustainable water quality in accordance with EPA Clean Water Act.