# PORTAGE COUNTY HEALTH DISTRICT

# *STORM WATER PROGRAM*

## 2017 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 2017 action plan, implementation activities, achievements, and challenges of the Storm Water Program in this 2017 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.

## 2017 Action Plan

The Health District's 2017 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 connection of illicit discharges to the Portage County Municipal Separate Storm Sewer 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 and mapping equipment for water quality testing, Global Positioning System (GPS) units for data collection and Geographical Information System (GIS) software for mapping. Staffs 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, 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 inspection, 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. Compile the list of addresses of houses served by HSTS within areas of available and accessible public sanitary systems and map the data

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 2017 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 reporting of inspections, consultations and sampling

20. Compile the 2017 PCHD Storm Water Program annual report for all stakeholders

## Notable Achievements

In pursuance of the Storm Water Program's 2017 action plan for illicit discharge detection and elimination (IDDE) in Portage County's townships and villages, Storm Water Program staff rigorously built upon the 2016 action 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:

- Completed all MS4 outfall verifications and dry-weather screening activities
- Applied for and successfully received $200,000 in financial assistance for low-to-moderate income homeowners from the 2018 Water Pollution Control Loan Fund (WPCLF) for the repair and/or replacement of household sewage treatment system
- Successfully disbursed $300,000 in financial assistance received for low-to-moderate income homeowners from the 2016 WPCLF for the repair and/or replacement of 24 HSTSs
- Updated all storm water system maps and distributed them to townships and villages
- Eliminated 852 public health nuisances between 2010 and 2016 by eliminating malfunction household sewage treatments systems public health nuisances by the repair, replacement or connection to sanitary sewer
- Compiled the list of addresses of houses served by HSTS within areas of available and accessible public sanitary systems and mapped the data
- Mapped all HSTS replaced between 2010 and 2017 in the county

## Storm Water Personnel

In 2017, the following PCHD personnel directly and actively participated in implementation and execution of the Storm Water Program:

Joe Diorio: Health Commissioner
Mary Helen Smith: Director of Environmental Health Services
Amos Sarfo: Supervisor, Storm Water Program
Daniel Robinson: Plumber and Storm Water IDDE Specialist
Emily Volz: Sanitarian-In-Training and Storm Water IDDE Specialist
Bridget Rinehart: Storm Water Clerk

## Illicit Discharge & Detection Elimination (IDDE)

An Illicit discharge is defined as a measurable flow containing pollutants and/or pathogens in a storm drain system during dry weather period. 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 careless practices at the home or workplace. The types of illicit discharge flows from homes and commercial establishments include sewage effluent, gray water (laundry), car wash residues, illegal dumping of oil and paint among others. Detection and elimination of illicit discharge from the storm drain 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 PCHD's IDDE objectives.

## Suspected Illicit Discharging 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 of 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 and failing HSTS. It contains other illicit discharges such as gray water discharges as well.

The database contained 3,652 suspected illicit discharges when it was initially compiled in 2010. It is reviewed, evaluated, and updated constantly as new information becomes available. The number of potential illicit discharging and failing HSTSs in the database has fluctuated every year since its creation in 2010 due to detection of new cases and elimination of existing cases through replacement or repairs or when a suspected case is determined unjustified and closed. This database remains an important resource for HSTS information search, field inspection, and repository of evidence for violation enforcement.

In 2017, the database had a total of 3,268 suspected illicit discharging and failing systems. Out of these 3,268 systems, 1119 are non-National Pollutant Discharging Elimination System (NPDES) permitted off-lot discharging Class 1 aeration systems, were acceptable technology and installed prior to 1997. Those non-National Pollutant Discharging Elimination System (NPDES) permitted off-lot discharging Class 1 aeration systems are in PCHD’s annual inspection program. The remaining 2,274 systems encompass suspected discharging, failing systems, or currently prohibited HSTSs such as filter beds, leach/dry wells that are not part of the annual inspection program. The filter beds and leach/dry wells were acceptable HSTS technology installed in the past that are currently deemed obsolete according to the new Ohio Department of Health’s rule (OAC 3701-29).

The HSTSs in the suspected illicit discharge and detection elimination database are managed as 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 OAC 3701-29-23
- Identification during a voluntary Point-of-Sale real estate inspection; and
- Storm water random inspection.

HSTS identified through any of the processes that needs further assessment are evaluated to determine whether the system is causing a public health nuisance in accordance with Ohio Revised Code 3718.011. The combined IDDE activities resulted in inspection of 309 illicit discharges, of which 214

were confirmed illicit discharges, 95 determined to be non-illicit discharge, 155 of the total 214 confirmed illicit discharges were eliminated, and the remaining 99 are pending for compliance.

## Suspected IDDE Inspection Activities

To detect and eliminate storm water illicit discharges, PCHD conducted outfall verification inspections, dry weather screening and best management practices mapping. Any industrial, manufacturing or man-made discharges were referred to the appropriate agency for investigation including the Ohio EPA.

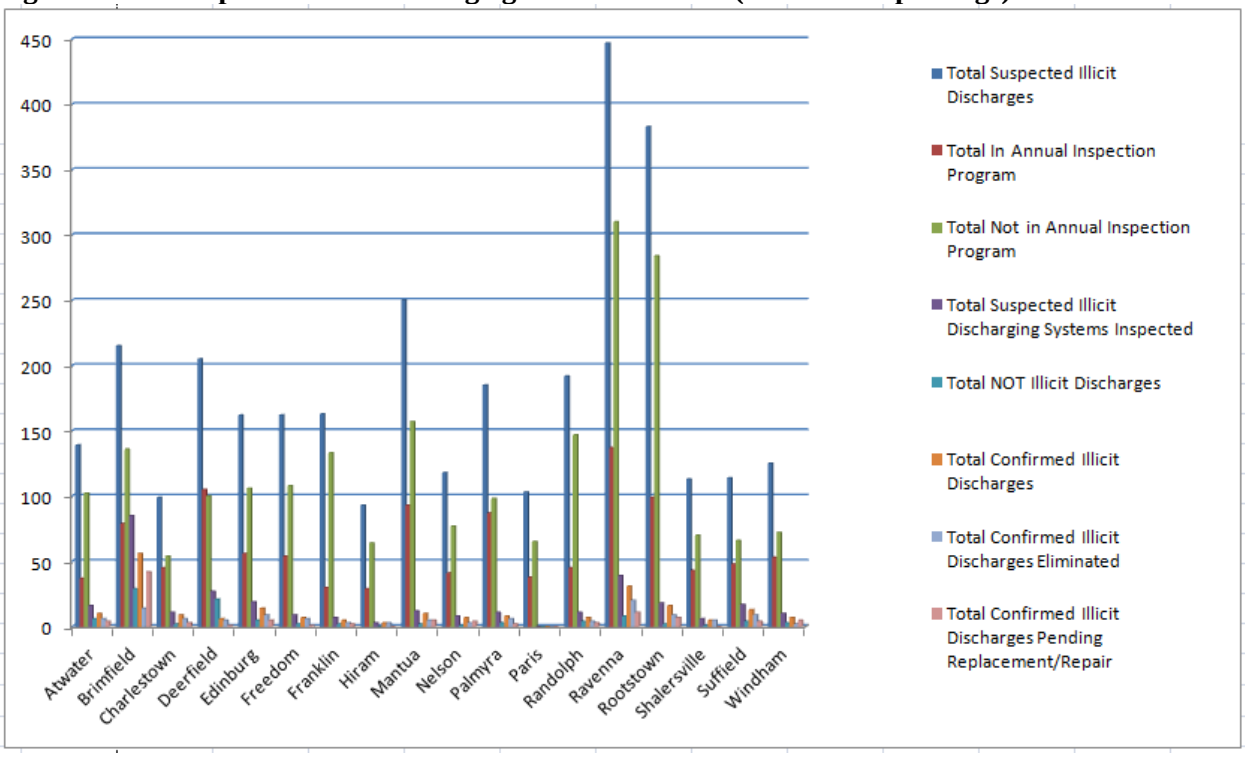
A summary of the total suspected discharges compiled per townships and villages in the county as of December 31, 2017 is found in Table 1 and graphically represented in Figure 1 below

**Table 1: 2017 Suspected Illicit Discharging HSTS and Status**

| PORTAGE COUNTY STORMWATER DISTRICT SUSPECTED ILLICIT DISCHARGE<br>December, 2017 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Township | Total Suspected Illicit Discharges | Total In Annual Inspection Program | Total Not in Annual Inspection Program | Total Suspected Illicit Discharging Systems Inspected | Total NOT Illicit Discharges | Total Confirmed Illicit Discharges | Total Confirmed Illicit Discharges Eliminated | Total Confirmed Illicit Discharges Pending Replacement/ Repair |
| Atwater | 139 | 37 | 102 | 16 | 6 | 10 | 6 | 4 |
| Brimfield | 215 | 79 | 136 | 85 | 29 | 56 | 14 | 42 |
| Charlestown | 99 | 45 | 54 | 11 | 2 | 9 | 6 | 3 |
| Deerfield | 205 | 105 | 100 | 27 | 21 | 6 | 5 | 1 |
| Edinburg | 162 | 56 | 106 | 19 | 5 | 14 | 9 | 5 |
| Freedom | 162 | 54 | 108 | 9 | 2 | 7 | 6 | 1 |
| Franklin | 163 | 30 | 133 | 7 | 2 | 5 | 3 | 2 |
| Hiram | 93 | 29 | 64 | 3 | 0 | 3 | 3 | 0 |
| Mantua | 250 | 93 | 157 | 12 | 2 | 10 | 5 | 5 |
| Nelson | 118 | 41 | 77 | 8 | 1 | 7 | 3 | 4 |
| Palmyra | 185 | 87 | 98 | 11 | 3 | 8 | 6 | 2 |
| Paris | 103 | 38 | 65 | 0 | 0 | 0 | 0 | 0 |
| Randolph | 192 | 45 | 147 | 11 | 4 | 7 | 4 | 3 |
| Ravenna | 447 | 137 | 310 | 39 | 8 | 31 | 20 | 11 |
| Rootstown | 383 | 99 | 284 | 18 | 2 | 16 | 9 | 7 |
| Shalersville | 113 | 43 | 70 | 6 | 1 | 5 | 5 | 0 |
| Suffield | 114 | 48 | 66 | 17 | 4 | 13 | 9 | 4 |
| Windham | 125 | 53 | 72 | 10 | 3 | 7 | 2 | 5 |
| **Total** | **3268** | **1119** | **2149** | **309** | **95** | **214** | **115** | **99** |

*Brimfield has an extraordinary high number of total confirmed illicit discharging systems pending repair/replacement suspended enforcement due to on-going discussions of sewer project possibilities in some Brimfield communities.

**Figure 1: 2017 Suspected Illicit Discharging HSTS and Status (Per Township/Village)**




## Maps of Suspected Illicit Discharging HSTS and Replacements

In 2017, using *ESRI* Geographical Information System (GIS) software, Storm Water Program staff updated existing maps created in previous years depicting visual representations of the suspected discharging HSTSs distributions in the Portage County Storm Water District.

Hydrolines (water bodies) and road features are overlaid on the maps to put the locations of the suspected discharging HSTSs in spatial context. The spatial relationship between the location of suspected illicit discharging HSTSs and water bodies helps to define illicit discharging point of entry into the waters of the state and its potential impact on water bodies. Figures 2 and 3 below show the maps of suspected and inspected and confirmed illicit discharging HSTSs. These maps are updated annually as new information becomes available.

Over 850 HSTSs have been replaced in the county between 2010 and 2017. Most of these replacements occurred largely because of storm water program IDDE and enforcement activities to improve water quality. Figure 4 below shows the visual representation and distribution of the HSTS repairs/replacements in the county.

**Figure 2: Spatial Distribution of 2017 Suspected Illicit Discharging HSTS Database**

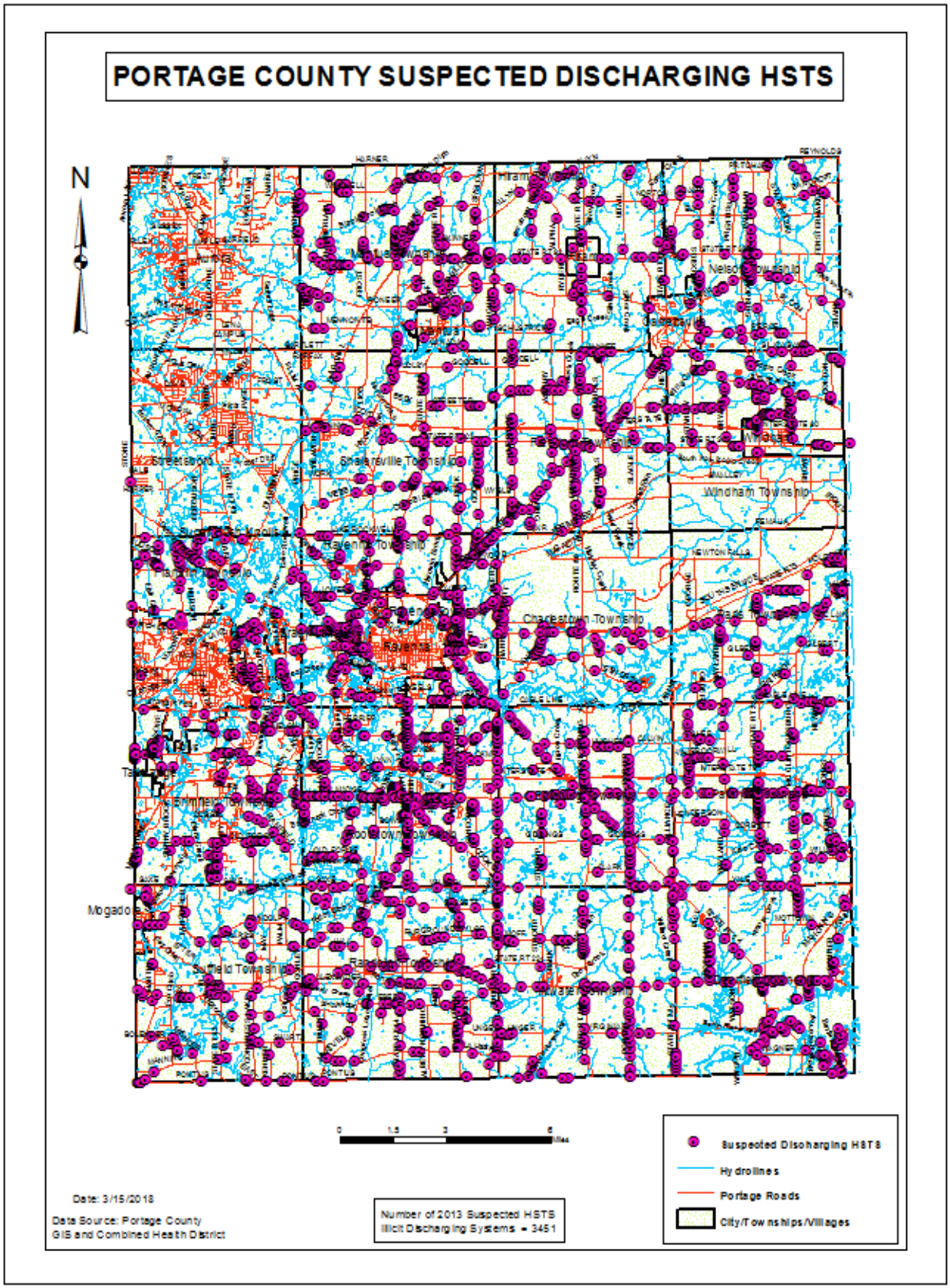


**Figure 3: Spatial Distribution of Suspected Illicit Discharging Systems Evaluation**

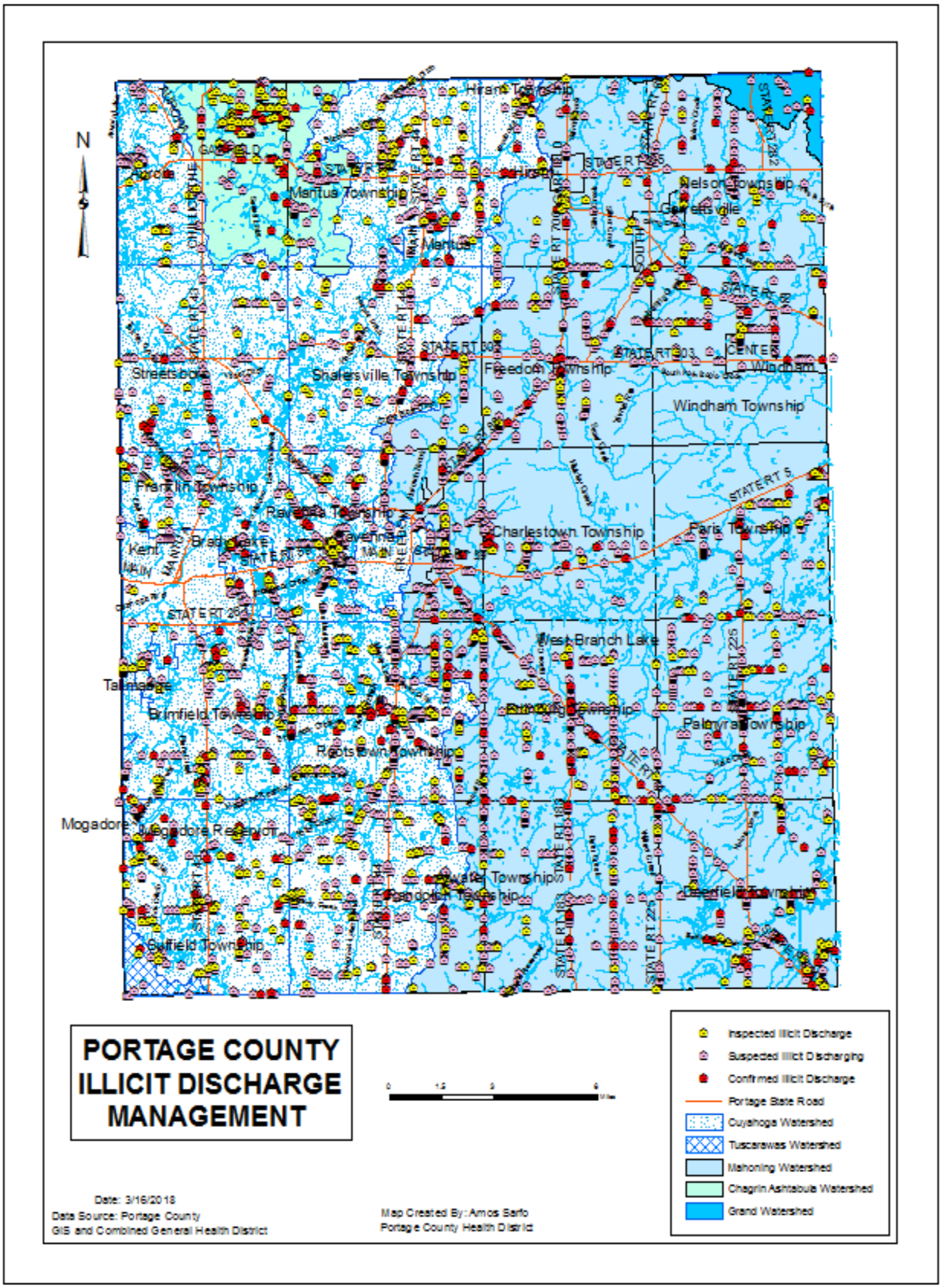
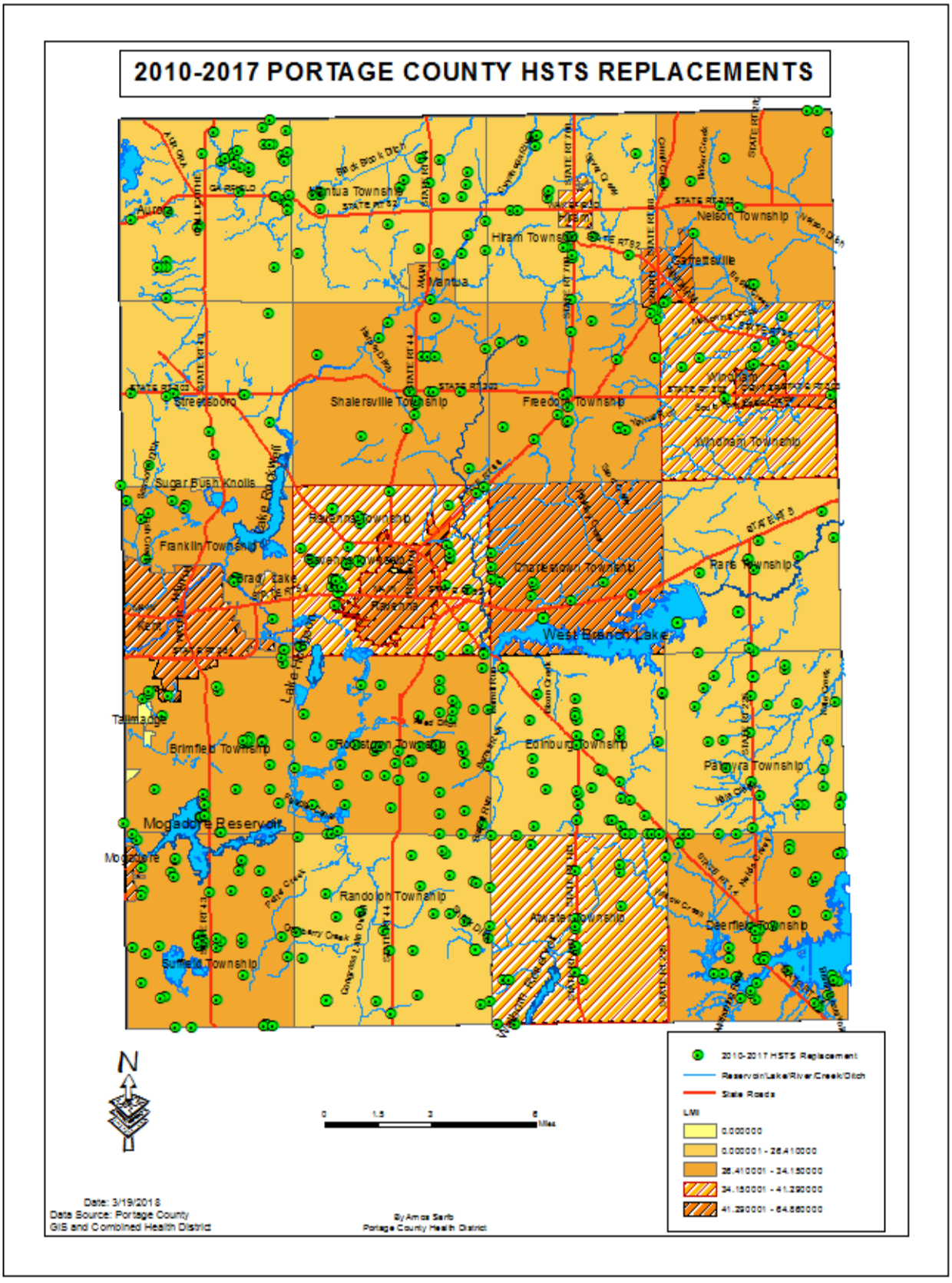


**Figure 4: Spatial Distribution of HSTS repairs/replacement from 2010 – 2017**



## Suspected HSTS IDDE Activities

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

In 2017, sixty-seven (67) Class 1 off-lot discharging aeration HSTSs were inspected by PCHD because the homeowners failed to provide the required operation and maintenance service contract in accordance with the Ohio Administrative Code (OAC) 3701-29 and the Health District's Supplemental Sewage Treatment System regulations.

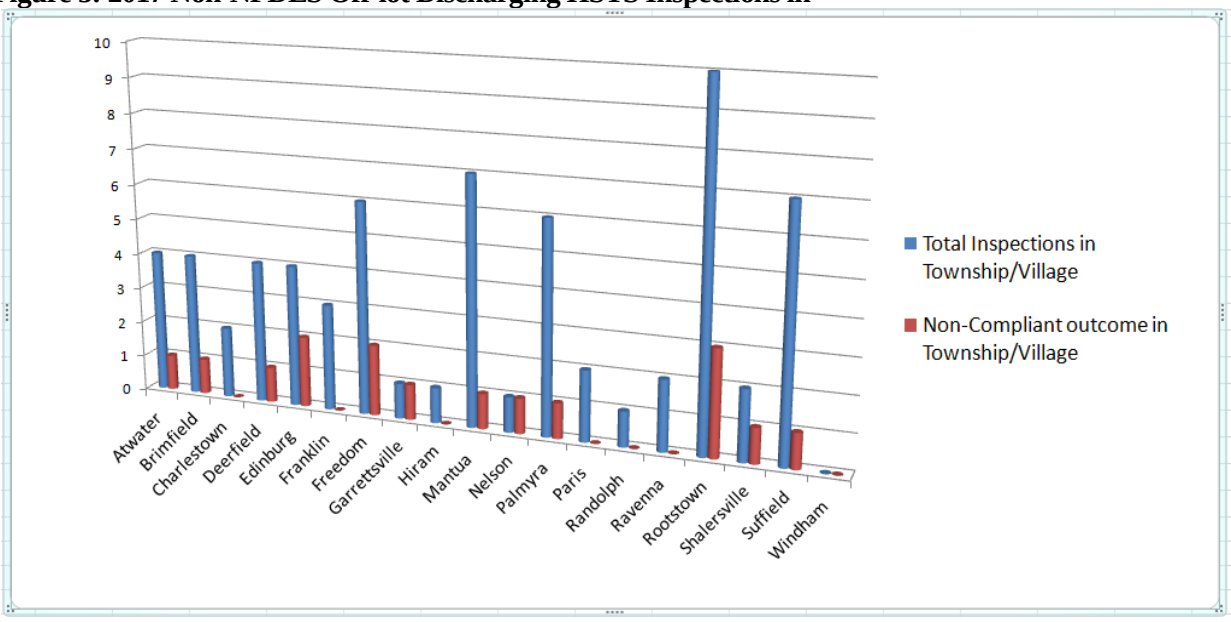
Sixteen (16), representing 23.9% of the sixty-seven (67) Class 1 off-lot discharging aeration systems inspected, were found to be non-complaint (most having broken motors). Notice of violation and enforcement letters were sent to the owners to repair the systems. Table 2 provides a summary of off-lot discharging Class 1 Aeration HSTS system and the inspection results by township.

**Table 2: 2017 Off-lot Discharging Class 1 Aeration System Inspections and Outcomes**

| Township | Total Inspections in Township/Village | Non-Compliant outcome in Township/Village |
|---|---|---|
| Atwater | 4 | 1 |
| Brimfield | 4 | 1 |
| Charlestown | 2 | 0 |
| Deerfield | 4 | 1 |
| Edinburg | 4 | 2 |
| Franklin | 3 | 0 |
| Freedom | 6 | 2 |
| Garrettsville | 1 | 1 |
| Hiram | 1 | 0 |
| Mantua | 7 | 1 |
| Nelson | 1 | 1 |
| Palmyra | 6 | 1 |
| Paris | 2 | 0 |
| Randolph | 1 | 0 |
| Ravenna | 2 | 0 |
| Rootstown | 10 | 3 |
| Shalersville | 2 | 1 |
| Suffield | 7 | 1 |
| Windham | 0 | 0 |
| **Total** | **67** | **16** |

Figure 5 below shows the graphical representation of inspection data of off-lot discharging HSTS without NPDES permits found in the townships and villages across Portage County in 2017 as quantified in Table 2.

**Figure 5: 2017 Non-NPDES Off-lot Discharging HSTS Inspections in**




## 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 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 6 below illustrates a dye test of a malfunctioning sewage treatment system discharging to waters of the state.

**Figure 6: Dye test showing 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

In 2017, PCHD received thirty-nine (39) suspected illicit household wastewater discharging written complaints. These nuisance complaints were fairly distributed across Portage County's townships and villages. Investigation of the thirty-nine (39) suspected nuisance complaints confirmed eighteen (18), representing 45.00%, were in violation, sixteen (16), constituting 40.00%, were determined to be not illicitly discharging, and six (6), representing 15.00%, are still pending investigation.

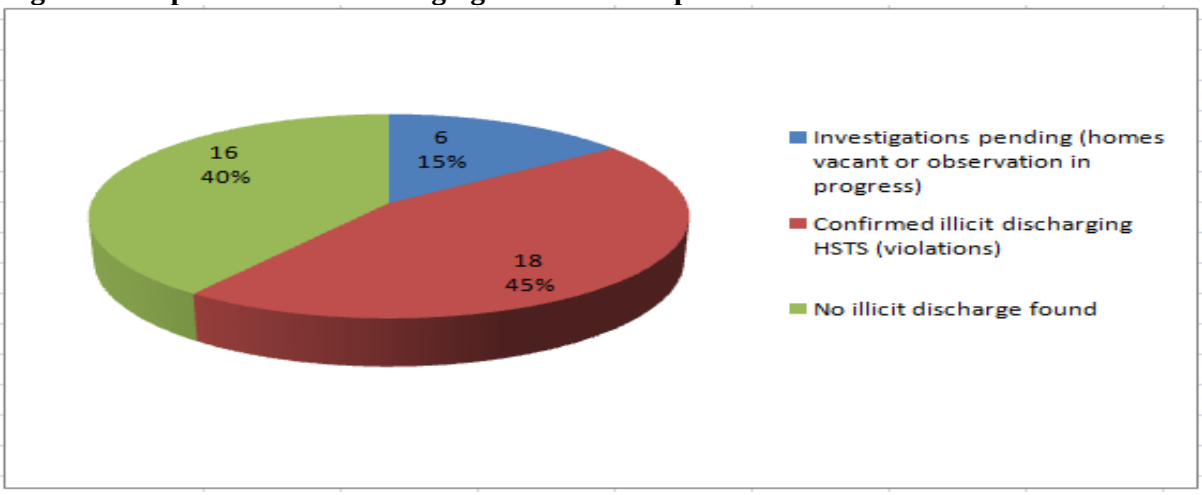
Several nuisance complaints could not be investigated because the complainants wanted to remain anonymous and did not continue with the process for fear of offering information they thought could potentially reveal their identity to the people they were complaining about. In these instances, complainants 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.

The public health nuisance complaint data analysis is summarized in Table 3 and Figure 6 below.

**Table 3: Suspected Illicit Discharging Nuisance Complaints**

| | | |
|---|---|---|
| Confirmed illicit discharging HSTS (violations) | 18 | 45.00% |
| No illicit discharge found | 16 | 40.00% |
| Investigations pending | 6 | 15.00% |
| **Total** | **40** | 100.00% |

**Figure 7: Suspected Illicit Discharging Nuisance Complaints**



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

Storm Water Program Staff also 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 illicit discharges found during a storm water routine inspection. The homeowners are given sixty (60) days time limit from the date a notice of violation certified letter is received to correct confirmed 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. 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.

In 2017, nineteen (19) HSTS failing or prohibited systems, representing 25% were identified among seventy-five (75) 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.

# Portage County Facility Planning and Prioritization

## Priority Area Facility Planning Activities

In 2017, PCHD Storm Water Program continued to collaborate with the Portage County Water Resources (PCWR) on bi-monthly basis to discuss the following issues:

- 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 STS 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 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, all but one of nine failing system on Lynwood Drive neighborhood was replaced
- In Brimfield Township, completion of engineering design plans for sanitary sewage project for the Oakwood neighborhood has also reached advance stage
- In Ravenna Township, the elimination of a public health nuisance conditions emanating from Bryn Mawr Street and Seabury Drive is an ongoing discussion between the residents of the neighborhood and their attorney on one side and PCHD, PWRD, and the City of Ravenna on the other to find funding for a sewer connection project
- In Ravenna Township, discussions were held with Ravenna Township Trustees, Water Resources Department, the County Board of Commissioners concerning nuisance condition in the Chinn Allotment and its elimination
- Based on nuisance investigation data provided by the Health District, Portage County Board of Commissioners passed a resolution to empower Portage County Water Resources Department to explore sewer project for Chin Allotment

## Storm Water IDDE Activities

### Storm Water Training

PCHD storm water staff received both internal and external training in 2017. Internally, staff periodically, met, read or listened to webinars to learn the nuances of the storm water program. Emily Volz and Dan Robertson were trained to use Yellow Springs Instruments (YSI) Water Quality Sampling and Monitoring Meter for testing and assessing water quality during dry weather screening of outfall points to test for pH, temperature, conductivity, and dissolved oxygen levels. Furthermore, they learned how to use Google Earth open software for storm water system features mapping. Moreover, Emily Volz was trained to master the process of IDDE and its enforcement.

Additionally, Joseph Diorio and Amos Sarfo attended the Northeast Ohio GIS User Group conference at Northeast Ohio Medical University, Rootstown, Ohio, where we learned the functions of GIS within local health departments and more specifically how GIS is used to facilitate the implementation of the storm water program goals. All these activities helped to improve the developmental capacity of the staff.

### Storm Water System Mapping

Using GIS mapping software and hand-held geographic position system (GPS), Portage County Storm Water District has created comprehensive storm sewer system maps covering catch basins, drainage system pipes, ditches, flood control facilities (retention and detention ponds), public and

private post-construction water quality best management practice (BMP), which have been installed to meet Ohio EPA's NPDES Construction Storm Water general permit and/or local post construction water quality BMP requirements. These maps are used to support IDDE and other storm water best management practices in the storm water district. The Portage County District 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 that receive discharges from those outfalls
2. Storm Water District's known discharging household sewage treatment systems (STSs)
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

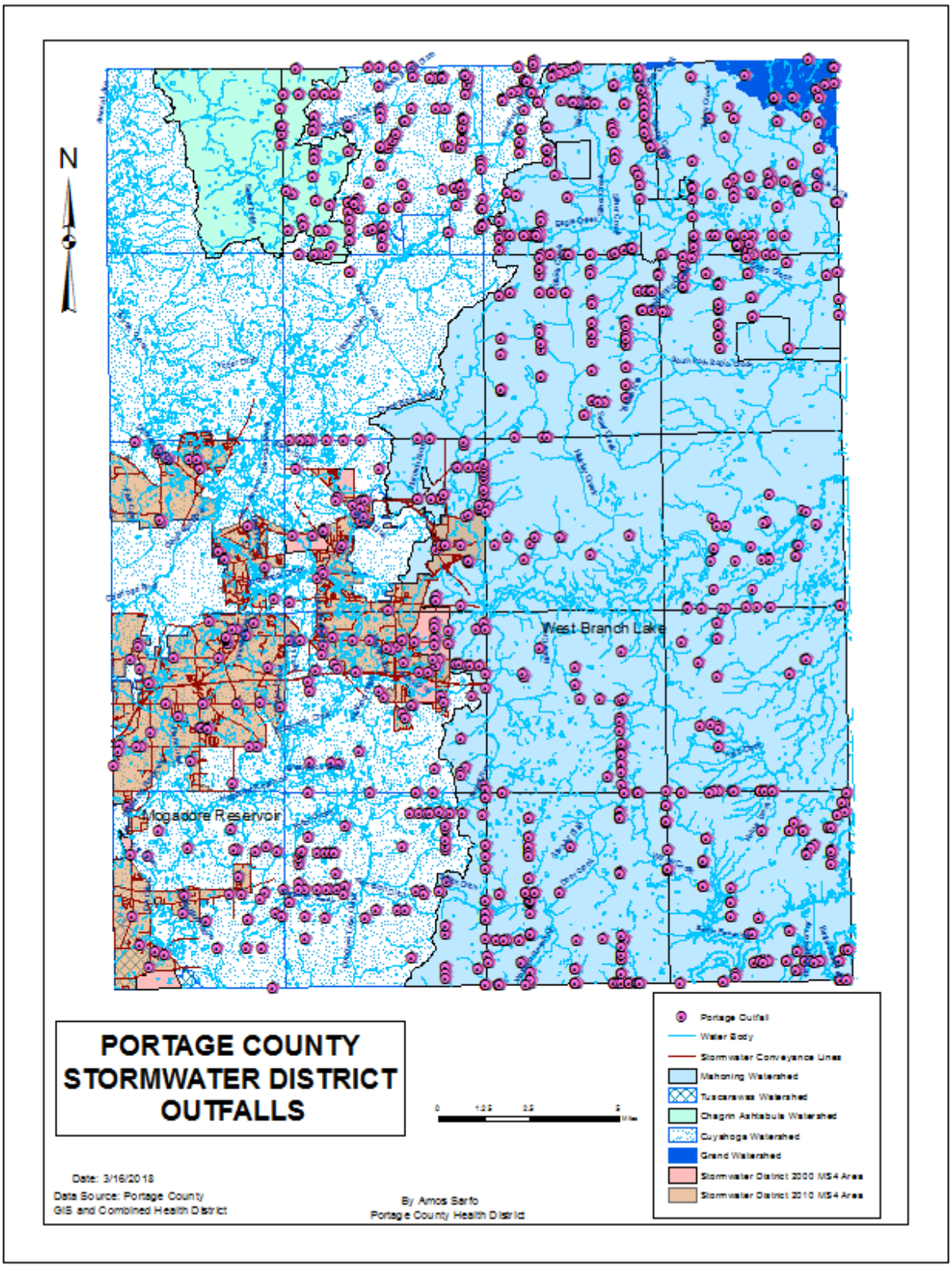
In 2017, Portage County Health District Storm Water Program reviewed and updated all of the Storm Water System GIS maps listed above. On November 18, 2017, Joe Diorio, PCHD Health Commissioner and Mary Helen Smith, Director of Environmental Health presented the updated maps at the Portage County Township Association Dinner held at Deerfield, Ohio. Copies of the maps were presented to the representatives of the townships and villages.

Upon receipt of the maps, PCHD encouraged the township and village representatives to inform the Health District of any necessary changes. PCHD storm water staff will update the maps annually to reflect any necessary changes requested by the township and village representatives or determined through PCHD staff field inspection.

Copies of some of the maps presented to the representatives are shown in figures 8-12 below:

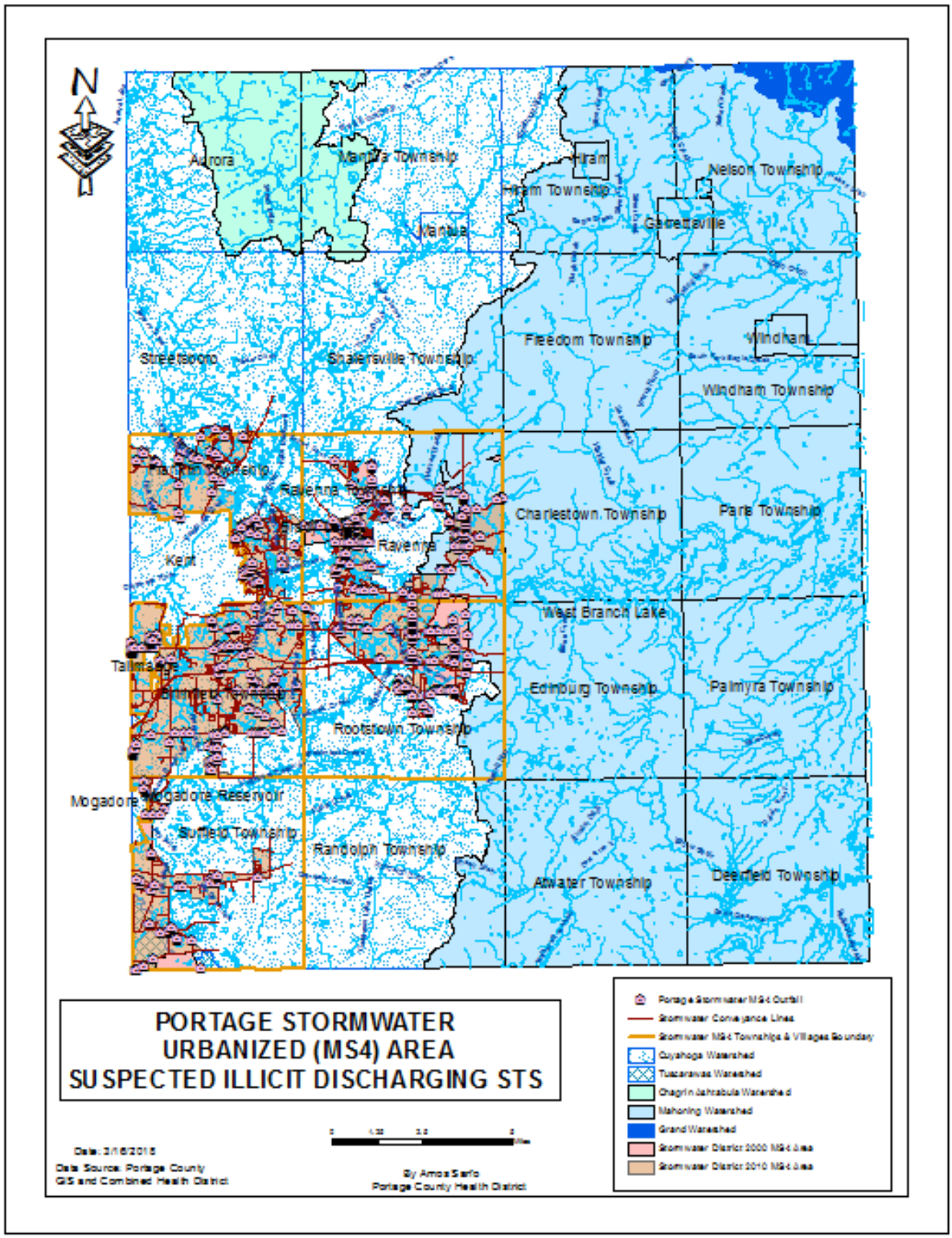
- Map 1: This is Storm Water District's outfall points map shown in Figure 8 below depicts the location of all outfalls and the name and location of all state surface waters including watersheds that receive discharges from those storm water system outfalls.

**Figure 8: Portage County Storm Water District Outfall Points**



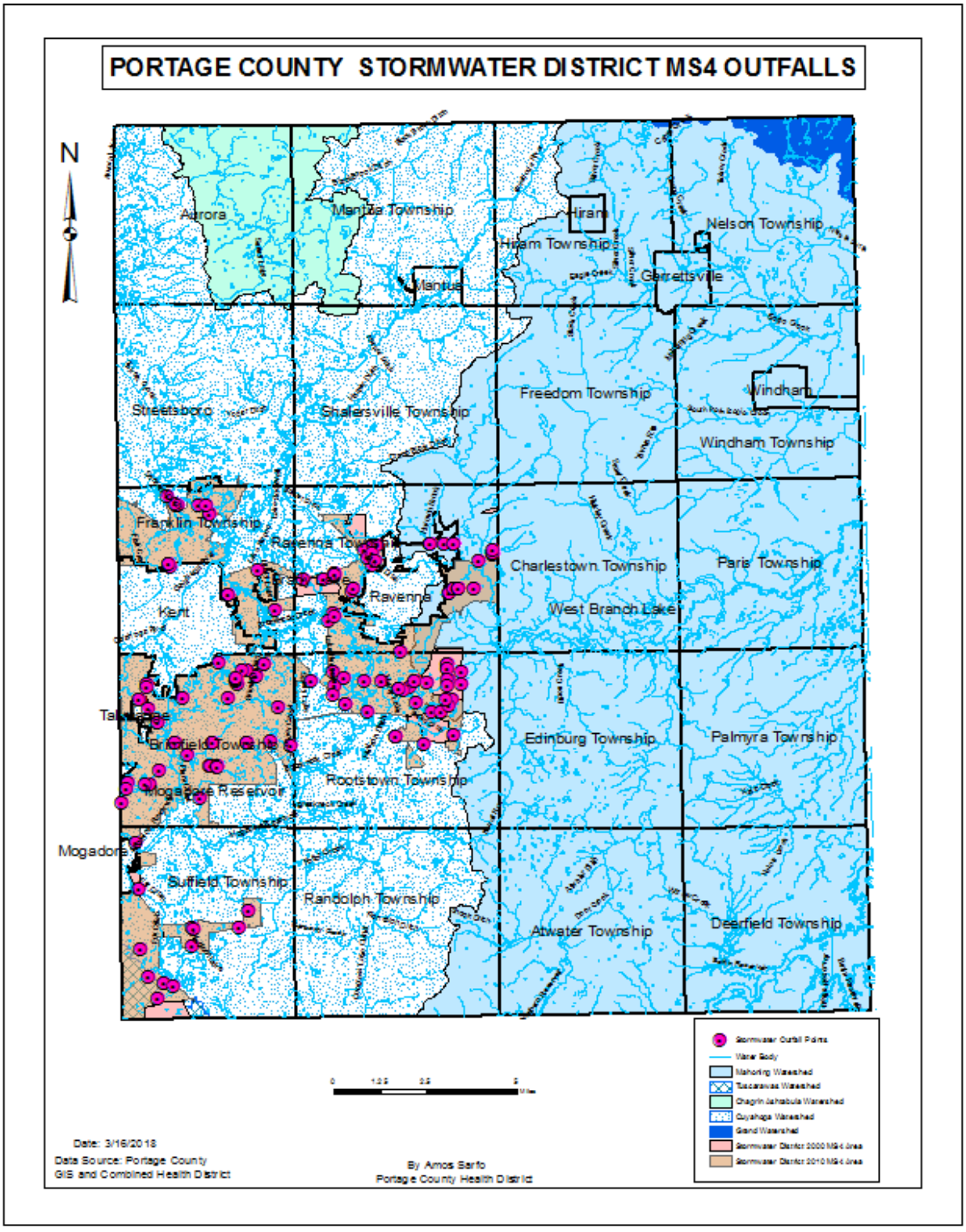
- Map 2: This map shown in Figure 9 below offers visual representation of known Storm Water District's discharging household sewage treatment systems (STSs) in Portage County Storm Water District's MS4 communities and the name and location of all state surface waters including watersheds that receive discharges from storm water drainage system.

**Figure 9: Known Portage County Storm Water District MS4 Suspected Illicit Discharging HSTS**



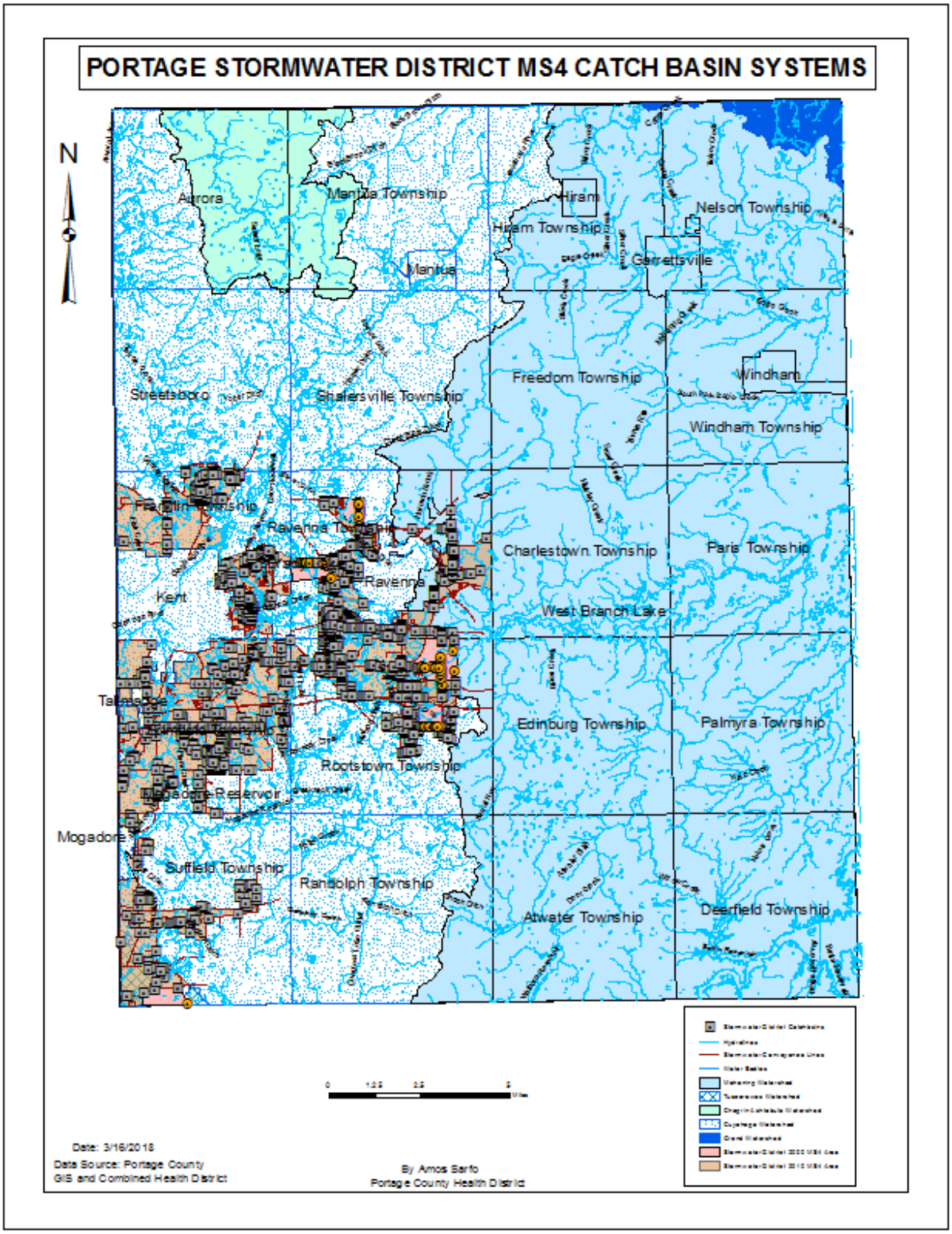
- Map 3: This map shown in Figure 10 below depicts spatial locations of Portage County Storm Water District's municipal small separate sewage system (MS4) outfall points and the name and location of state surface waters including watersheds that receive discharges from the storm water system outfalls.

**Figure 10: Portage County Storm Water District MS4 Outfall Points**



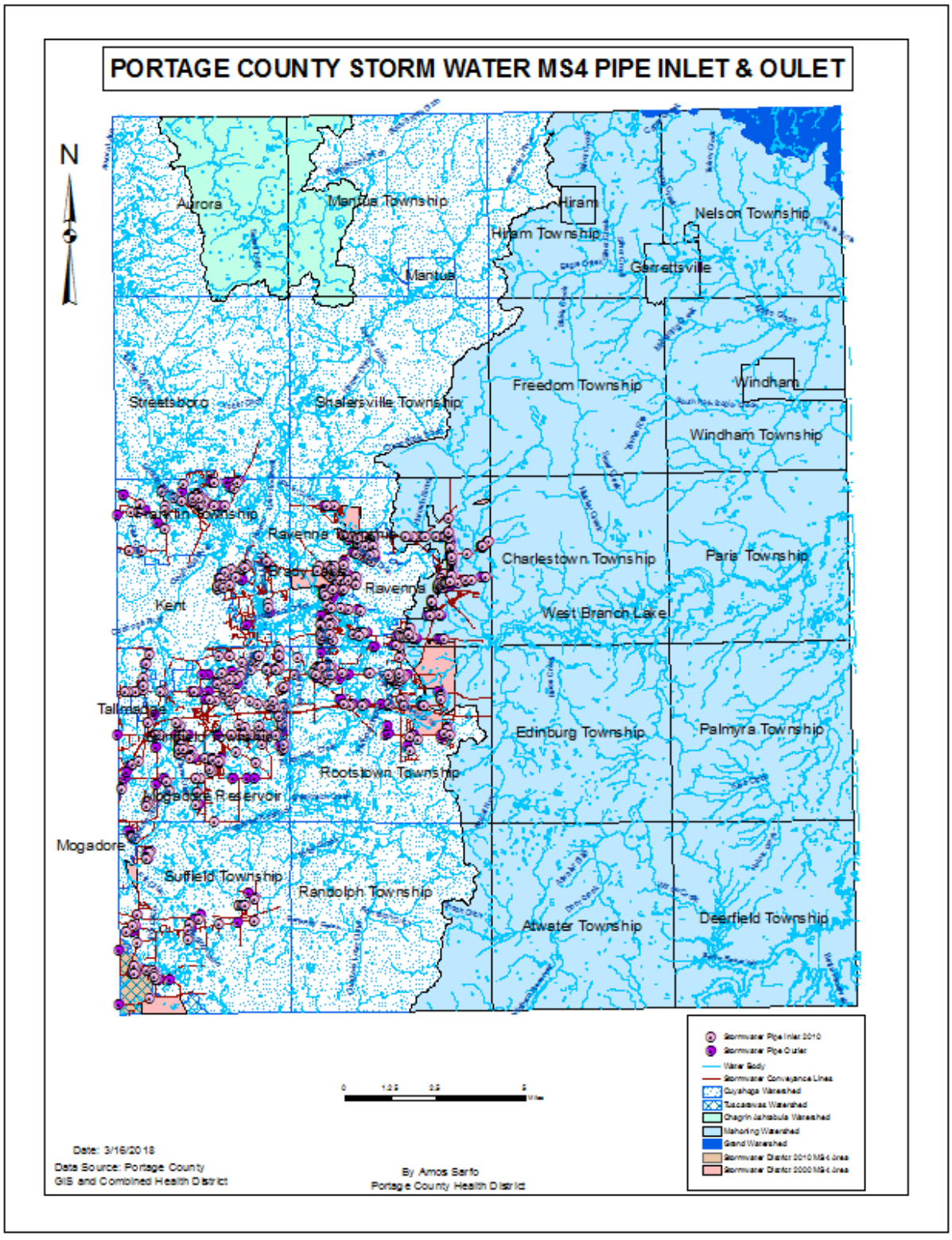
- Map 4: This map shown in Figure 11 below depicts Storm Water District's MS4 drainage systems catch basins and the name and location of all state surface waters including watersheds that receive discharges from the storm water drainage system.

**Figure 11: Portage County MS4 Storm Water Catch Basins**



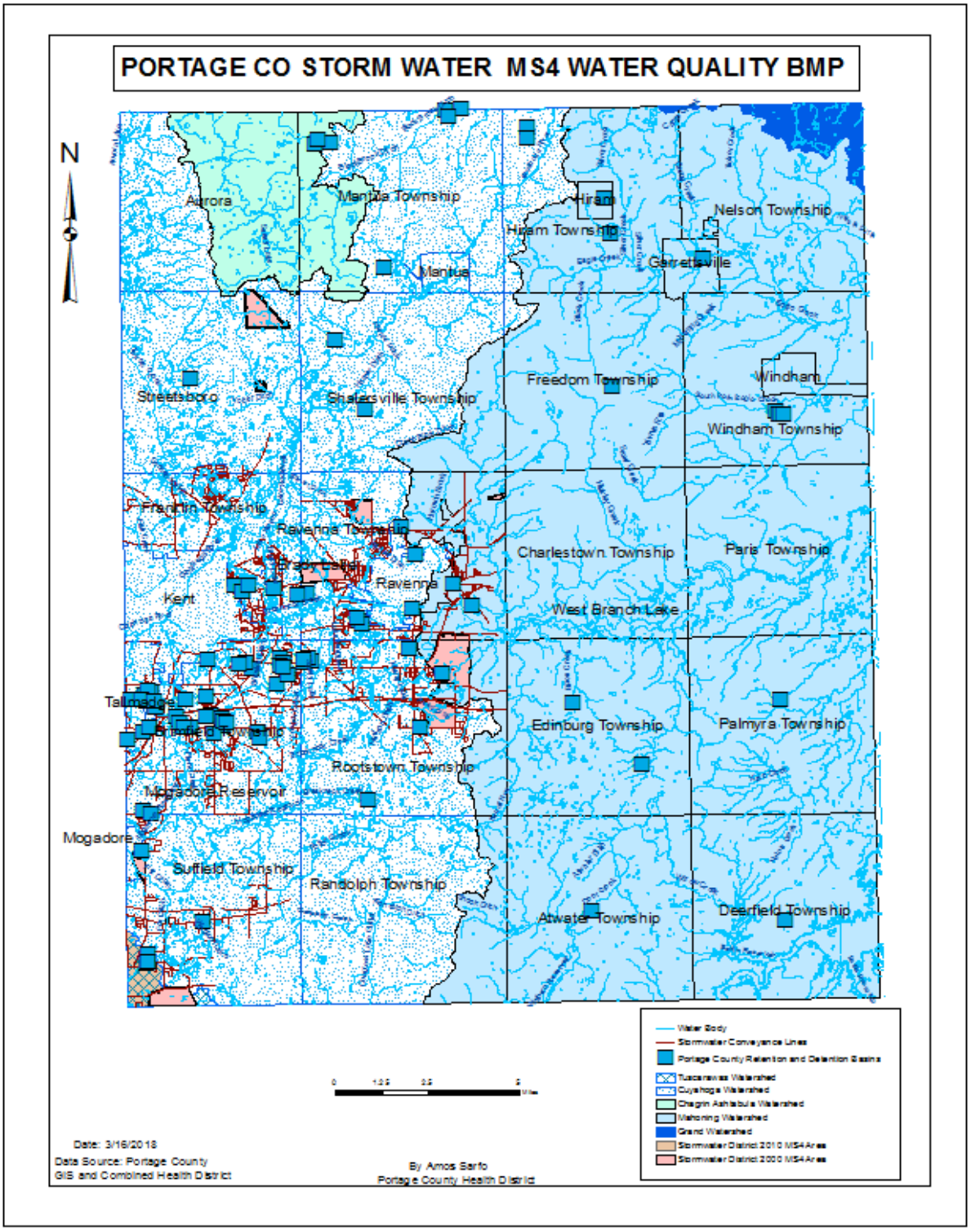
- Map 5: This map shown in Figure 12 below presents Storm Water District's MS4 drainage system pipes (inlet and outlet) and the name and location of all state surface waters including watersheds that receive discharges from the storm water drainage system.

**Figure 12: Portage County MS4 Storm Water Pipe Inlets and Outlets**



- Map 6: This map shown in Figure 13 below 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 the names and locations of all state surface waters including watersheds.

**Figure 13: Portage County Storm Water System Retention and Detention Basins**



## Storm Water IDDE Screening and Mapping

In 2017, PCHD Storm Water Program staff reviewed all previously created storm water system GIS maps to facilitate IDDE activities. With the help of 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 unit 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 implement appropriate enforcement procedures and actions to prevent contamination of the waters of the state.

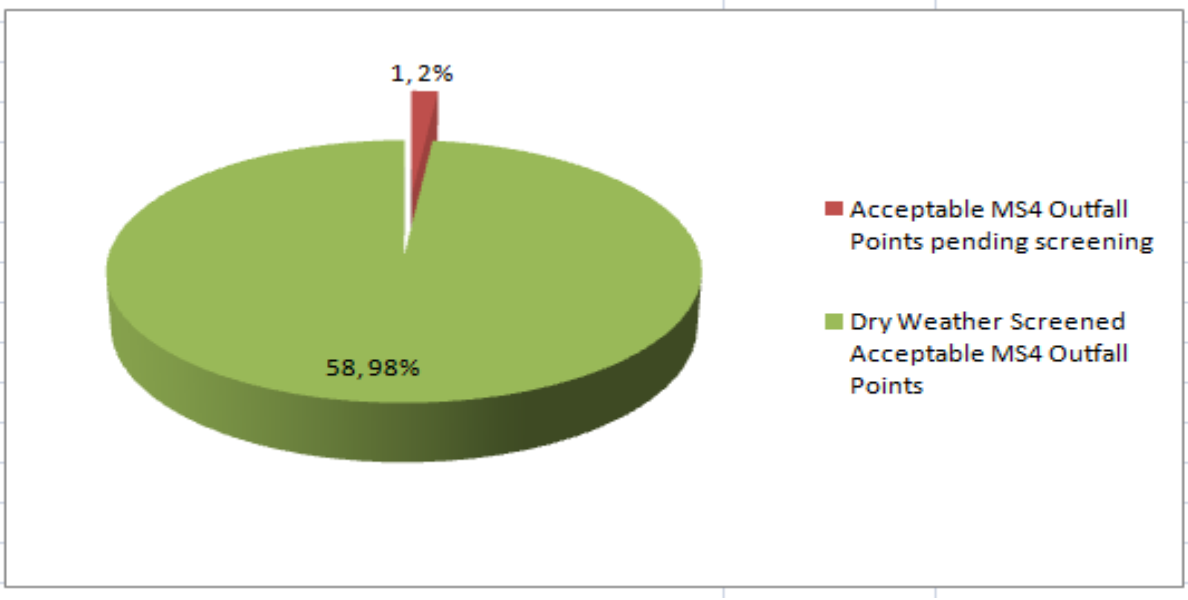
## Inspection and Assessment of MS4 Outfall Points

The Storm Water staff inspected and dry weather screened 59 verified MS4 outfall points during 2017. Of the 59 MS4 outfall points, 58 (98.30% of 59) were dry weather screened, and 1 (1.70% of 59) is pending dry weather screening due to discrepancies in the data. This information is detailed in Table 4 and Figure 14 below.

**Table 4: Distribution of Dry Weather Screened MS4 Outfall Points**

| Acceptable Mapped Storm Water MS4 District Outfall Points | | |
|---|---|---|
| Dry Weather Screened Acceptable MS4 Outfall Points | 58 | 98.30% |
| Acceptable MS4 Outfall Points pending screening | 1 | 1.70% |
| Total Acceptable Mapped MS4 Outfall Points | 59 | 100.00% |

**Figure 14: Distribution of Dry Weather Screened MS4 Outfall Points**



## Verified Non-MS4 Outfall Points Assessment

The Storm Water staff inspected and verified 486 non-MS4 outfall points during 2017. Of the 486, 228 (46.91%) were eliminated because they were found not to be outfalls. Of the remaining 258 (53.09%) points, 87 (33.72%) of them were dry weather screened and 171 (66.28%) non-MS4 mapped outfalls are pending dry weather screening due to weather limitations. This information is detailed in Tables 5 & 6 and Figures 15 & 16 below.

**Table 5: Distribution of Verified Non-MS4 Mapped Storm Water Outfall Points**

| Non-MS4 Mapped Storm Water District Data | | |
|---|---|---|
| Eliminated Mapped Non-MS4 Outfall Points | 228 | 46.91% |
| Acceptable Mapped Non-MS4 Outfall Points | 258 | 53.09% |
| Total Verified Non-MS4 Outfall Points | 486 | 100.00% |

**Figure 15: Distribution of Mapped Storm Water Non-MS4 Outfall Points Verification**

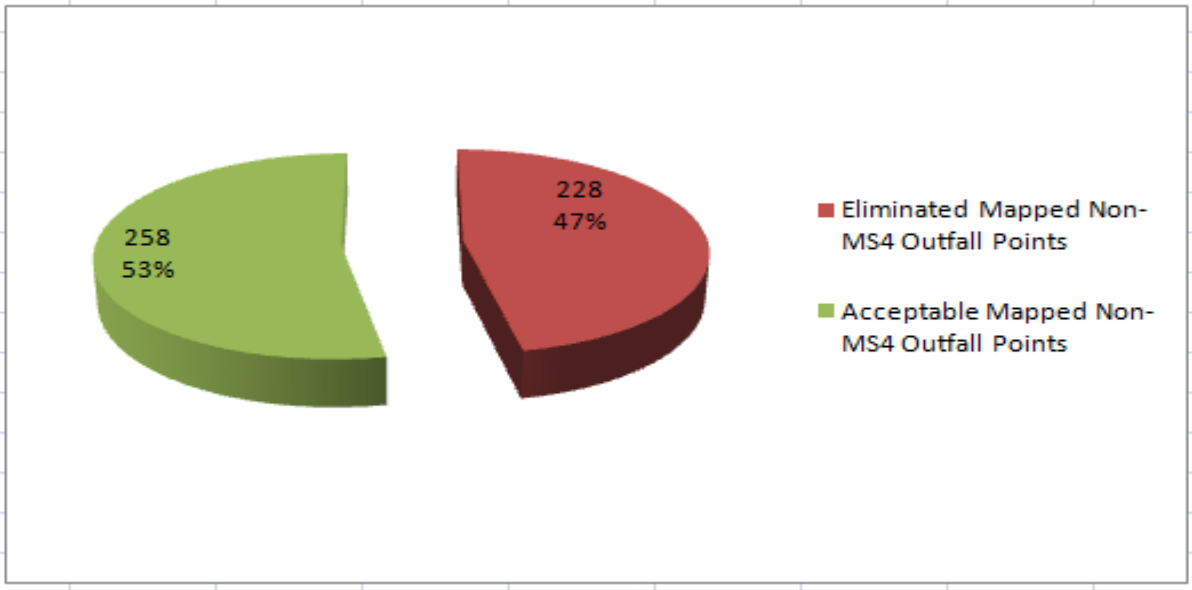
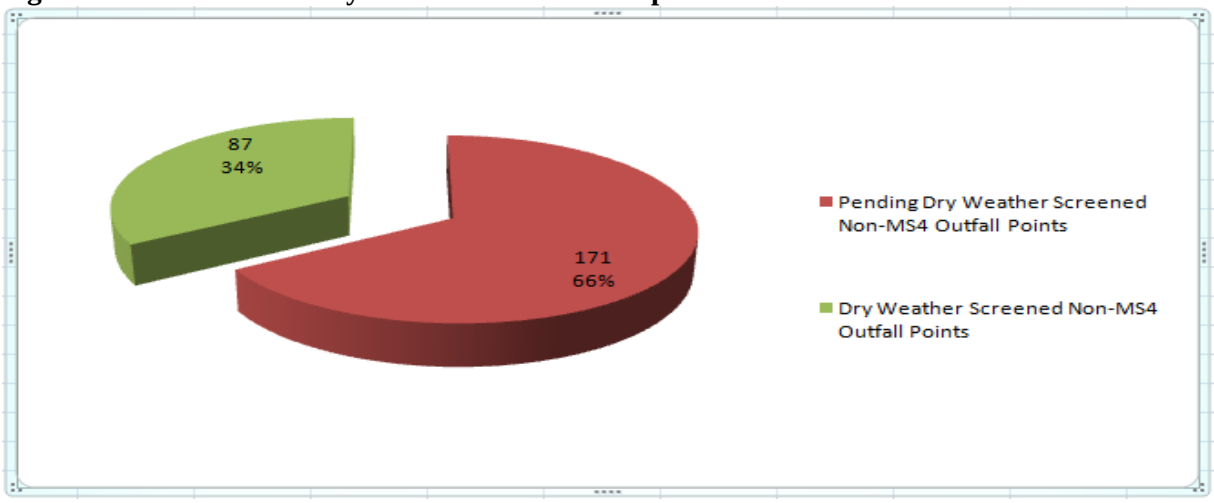



**Table 6: Distribution of Dry Weather Screened Acceptable Non-MS4 Outfall Points**

| Storm Water Non-MS4 District Data | | |
|---|---|---|
| Dry Weather Screened Non-MS4 Outfall Points | 87 | 33.72% |
| Pending Dry Weather Screened Non-MS4 Outfall Points | 171 | 66.28% |
| Verified Non-MS4 Outfall Points | 258 | 100.00% |

**Figure 16: Distribution of Dry Weather Screened Acceptable Non-MS4 Outfall Points**



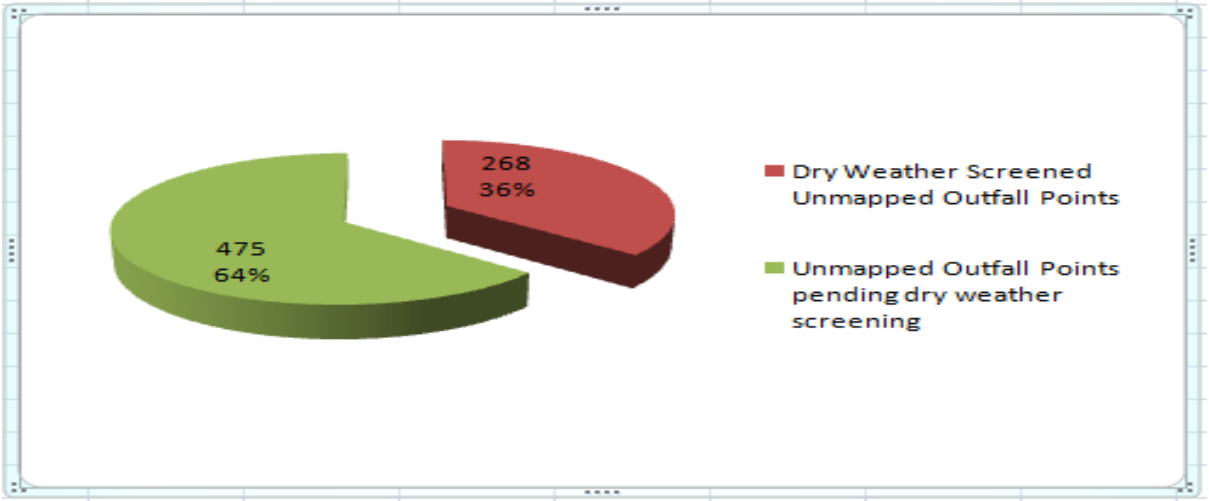

## Additional Outfall Points Identified and Assessed During Inspections

The Storm Water Staff identified and mapped an *additional* 743 outfall points identified during outfall inspections that were not included in the Storm Water District's database. Of the 743 additional outfall points, 268 (36.07%) were screened, and 475 (63.93%) outfalls are pending dry weather screening due to weather limitations. This information is detailed in Table 7 and Figure 17 below.

**Table 7: Distribution of Dry Weather Screened Additional Unmapped Outfall Points**

| Additional Unmapped Points Identified In MS4 and Non-MS4 Areas | | |
|---|---|---|
| Dry Weather Screened Unmapped Outfall Points | 268 | 36.07% |
| Unmapped Outfall Points pending dry weather screening | 475 | 63.93% |
| Total additional Unmapped Outfall Points | 743 | 100.00% |

**Figure 17: Distribution of Dry Weather Screened Additional Unmapped Outfall Points**



## Status of Illicit Discharge Elimination Enforcement Activities

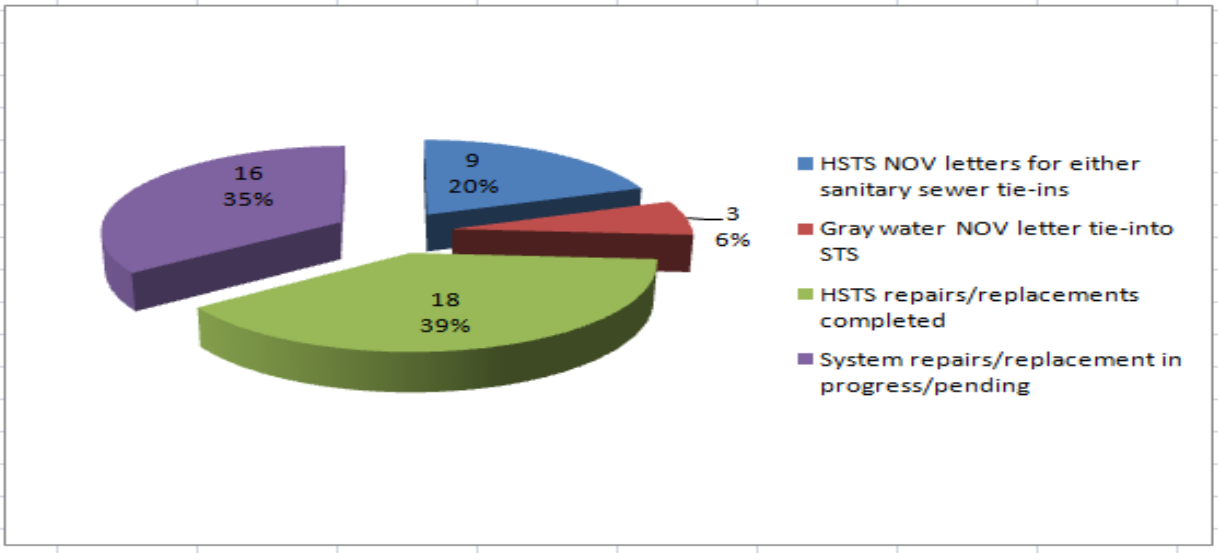
In 2017, Portage County Storm Water Program staff issued forty-six (46) illicit discharge elimination Notices of Violation (NOV) as summarized in Table 8 and graphically represented in Figure 18:

- Nine (9), representing 19.57%, involving malfunctioning HSTS that were required to connect to sanitary sewer are pending .
- Three (3), representing 6.52%, concerned gray water (laundry) that redirected the wastewater to the STS
- Eighteen (18), representing 39.13%, made the required repairs to or the replacement of the STS systems
- Sixteen (16), representing 34.78%, are in the process to complete the STS repair and/or replacement procedure.

**Table 8: Notice of Violation Enforcement Status**

| | | |
|---|---|---|
| HSTS NOV letters for sanitary sewer tie-ins pending | 9 | 19.57% |
| Gray water NOV letter to tie-into STS | 3 | 6.52% |
| HSTS repairs/replacements completed | 18 | 39.13% |
| System repairs/replacement in progress/pending | 16 | 34.78% |
| **Total repair/replacement orders** | **46** | **100.00%** |

**Figure 18: Distribution of Notice of Violation Enforcement Status**



# Financial Assistance to Eliminate Illicit Discharges

## 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 illicit discharge.

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 in the form of soft loans or grants is based on income and federal poverty guidelines. Applicants must meet certain conditions determined by the individual funding organization. Available financial support to qualified applicants is usually disbursed on first-come, first-served basis.

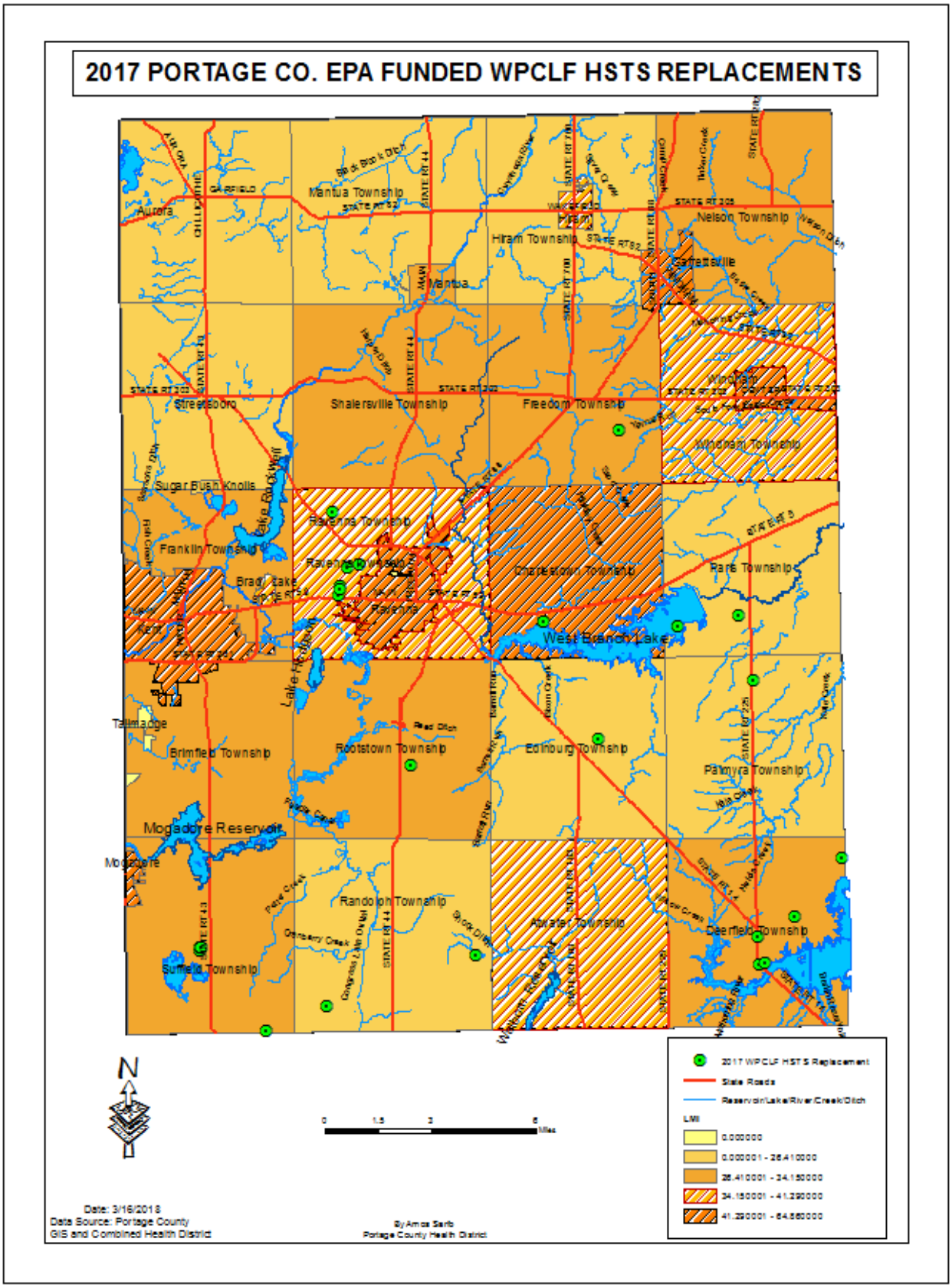
## Water Pollution Control Loan Fund (WPCLF) Program

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, applied for and received $300,000 of the 2016 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, which will have to be spent in 2018. In 2017, PCHD successfully applied for the grant one more time and slated to receive $200,000 for 2018 disbursement year. One change to the program will allow Portage County to utilize up to 50% of the funds to assist low-to-moderate owner-occupied properties with a sewer connection in the subsequent years.

A map of Ohio EPA WPCLF 24 funded replacement HSTSs in 2017 is shown in figure 19 below. This map shows the geographical location of the 24 replacement HSTSs in low to moderate income locations across the county. These replacements reduce HSTS discharges into the waters of the state and improve water quality.

**Figure 19. WPCLF HSTS Replacements in 2017**



# Education and Outreach Activities

## Community Outreach

In 2017, 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

The PCHD Storm Water Program utilizes a brochure and flier offering a succinct explanation of the Storm Water Program mandate as part of our educational outreach. Furthermore, the brochure explains the importance of proper maintenance of a HSTS, and offers information on myths and facts about HSTSs. Storm Water staff give homeowners copies of this brochure during field inspections. Staff also notifies property owners in a timely manner about findings of the HSTS inspection by a check mark as to whether it:

(a) Passed visual survey,

(b) Is failing, needs repaired/replaced, or

(c) Needs further evaluation.

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 by phone, email, office, and field consultation on an on-going basis.

# Illicit Discharging Sewage Treatment System Policy

Effective April 24, 2014, PCHD established an official written *Illicit Discharging Sewage Systems Policy* to clearly define appropriate procedures in addressing illicit discharging sewage systems detected through various health department Storm Water and Sewage Treatment System Program activities.

This policy outlines corrective requirements/options and enforcement timeframes for all illicit discharging sewage systems discovered via: property transfer evaluations, home use changes, lot split proposals, nuisance complaints and the Class 1 Aeration Inspection Program.

PCHD reviewed the policy in 2017 and will make necessary changes in accordance with the newly revised Ohio Environmental Protection Agency's 2017 National Pollution Discharge Elimination Permit (NPDES) and the Ohio Department of Health's 2015 Sewage regulations (OAC 3701-29).

## Conclusion

In 2017, 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. PCHD completed all its MS4 outfall verifications and dry-weather screening goals. Through the Storm Water Program specifically, PCHD was able to eliminate 24 failing HSTS, which did reduce contamination of the waters of the state.

Additionally, in 2017, 101 illicit discharge cases were eliminated or closed through storm water outfall points-, nuisance complaints-, point of sale-, and voluntary HSTS replacement inspections and notice of violation enforcements.

Overall the Storm Water Program continuous 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.