Successfully Tracking Difficult & Unusual Illicit Discharges

Brad Johnson, MPA, REHS/RS Supervisor, Division of Water Quality



May 11, 2018







Next 60 Minutes

- 1. Intro to the Hamilton County Stormwater District
- Investigative Methods (Analysis/Tools/Equipment)
- 3. Reoccurring Illicit Discharges
- 4. Unusual Discharges
- 5. Tracking Difficult Discharges 2017 Outfall Investigations







Hamilton County Storm Water District (HCSWD): Background



- Founded in 2003 in response to Federal and State NPDES Phase II permit requirements
- Includes:
 - All 12 townships in Hamilton County, Ohio
 - Municipalities who have elected to become District copermittees
 - All land uses Ultra-urban, Urban, Suburban and Rural
- Leverages existing County agency programs:
 - Hamilton County Engineer's Office
 - Hamilton County Public Health
 - Hamilton County Planning & Development
 - Hamilton County Soil & Water Conservation District









District Built a Robust Investigative GIS Map

- Office
- Field (tablets & phones)

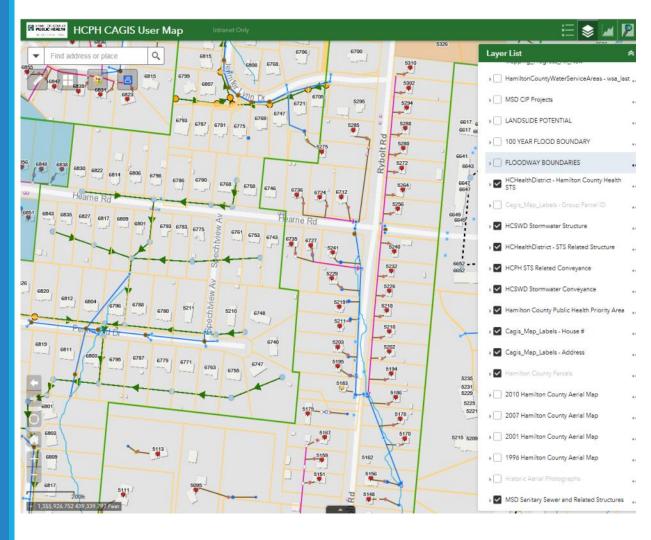




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Healthy choices Healthy lives Healthy communities



Water Truck

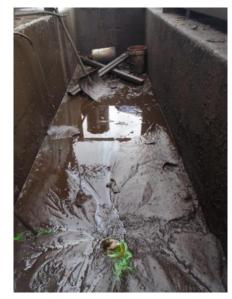
- Dye Testing













Specialized Cameras

- Pole
- SeeSnake®















Specialized Cameras - Pole











Smoke Machine

- Dry
- Wet











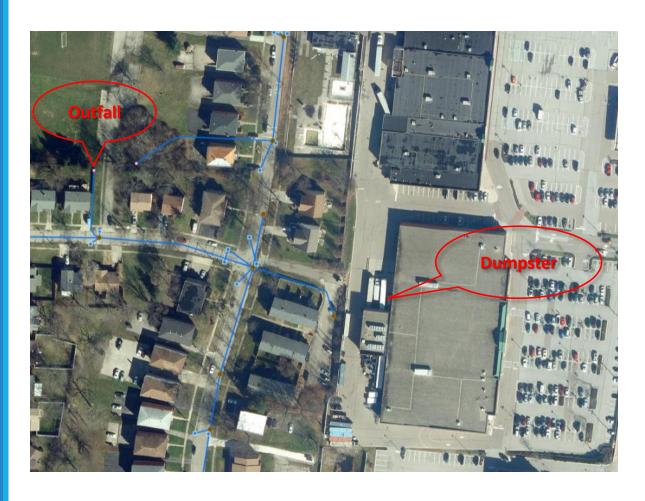












Dumpster Impacts on Stormwater - BEFORE



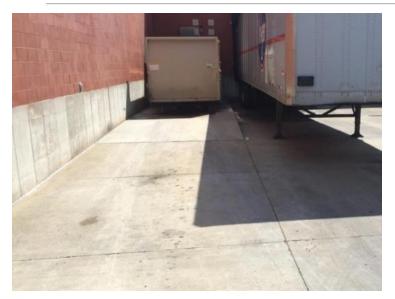








Dumpster Impacts on Stormwater - AFTER



















Dumpster Impacts on Stormwater - BEFORE











Dumpster Impacts on Stormwater - AFTER









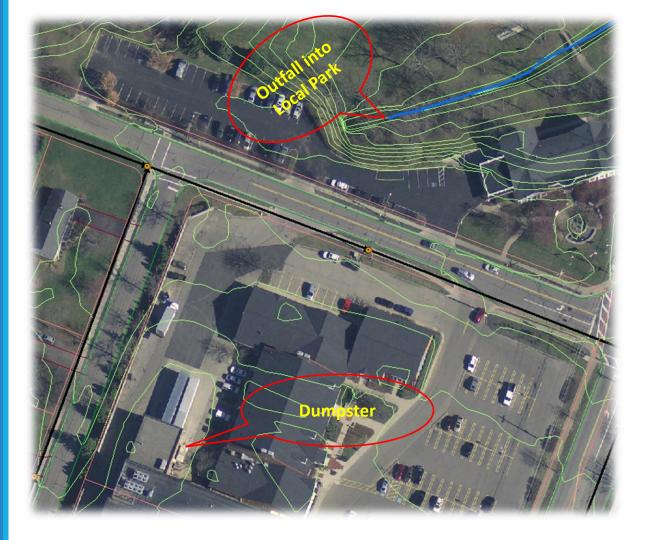






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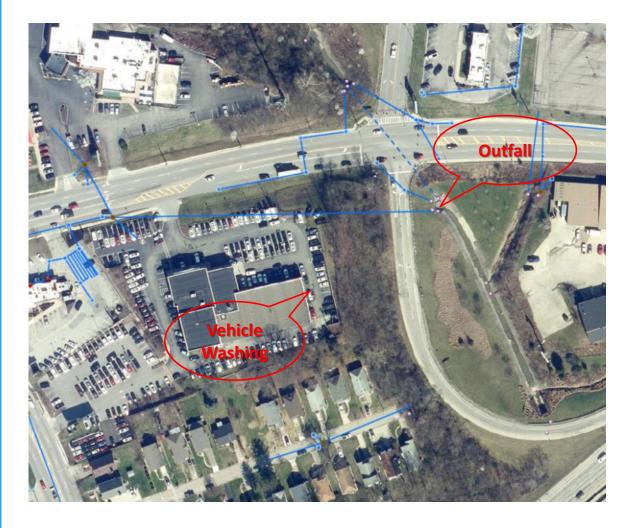












































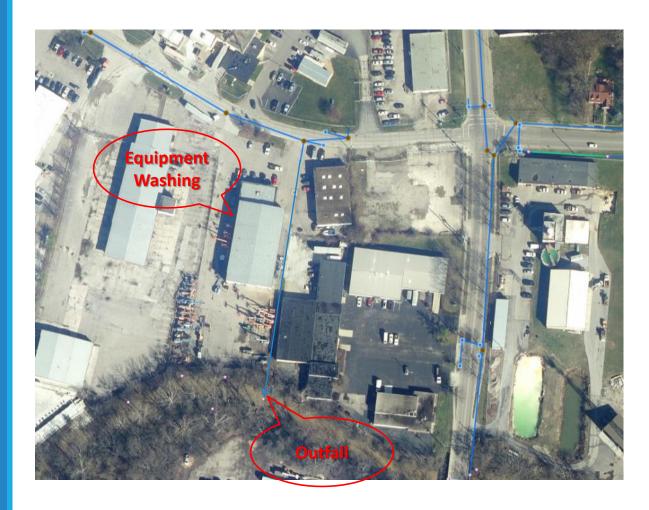










































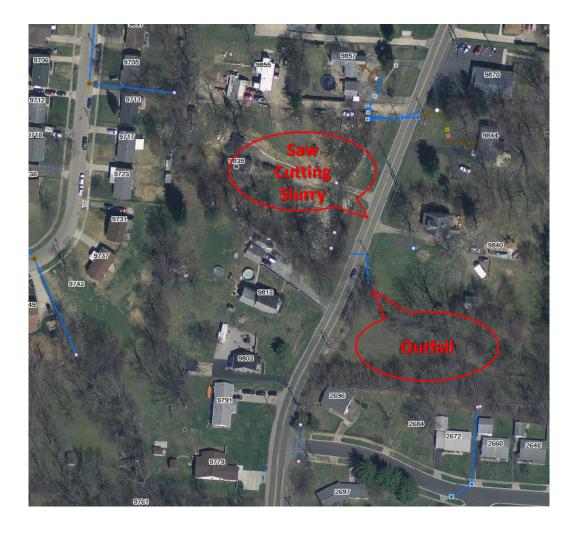


Concrete & Asphalt Work (2015)









Concrete & Asphalt Cutting Slurry (2015)











Concrete Cutting Slurry (2015)













Concrete Cutting Slurry (2016)











Concrete Washout (2016)











Concrete Washout (2016)











Asphalt Sealer (2017)











Asphalt Sealer (2013)













Concrete Production Plant (2015)











Fats/Oils/Grease Management (2015)









Fats/Oils/Grease Management (2015)











Fats/Oils/Grease Management (2015)











Fats/Oils/Grease Management (2015)











Fats/Oils/Grease Management (2016)













More UNUSUAL Discharges Discovered







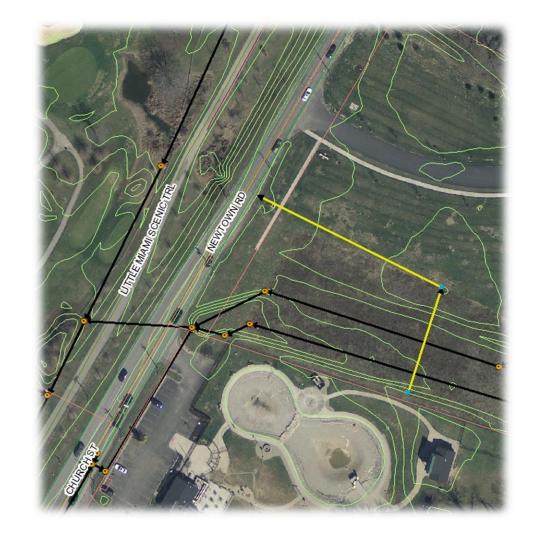


Outdoor Dog Park (2016)









Outdoor Dog Park (2016)











Dog Kennel Washing (2014)











Dog Kennel Washing (2016)













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Craft Beer Brewing (2016)









Craft Beer Brewing (2016)













Craft Beer Brewing (2016)













Craft Beer Brewing (2018)







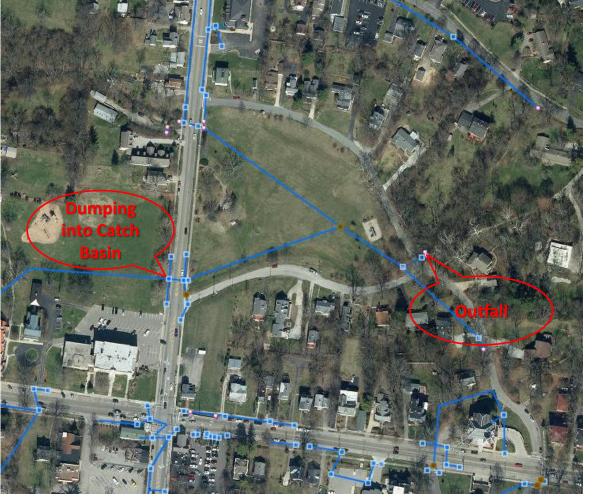




Seasonal Facilities (2015)







Seasonal Facilities (2015) – School Floor Stripping











Seasonal Facilities (2017)









Seasonal Facilities (2017) – Mobile Food Trailer











Geothermal Well Installation (2015)











Carpet Cleaning Company (2016)













Fresh Fish Delivery (2017)









Industrial & Warehouse Facilities (2016)









Industrial & Warehouse - Food Distribution (2016)













Industrial & Warehouse – Screen Printing (2016)











Industrial & Warehouse – Coolant Release (2016)











Stormwater Investigation: Business Calls our Pollution Hotline. "Bad odor coming from stream."









Stormwater Investigation: Location of Complaint









Stormwater Investigation: Stream Observations









Stormwater Investigation: Stream Observations











































































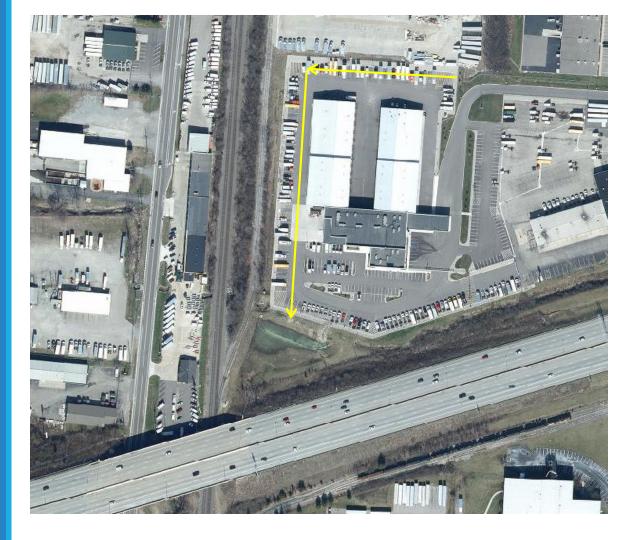










































































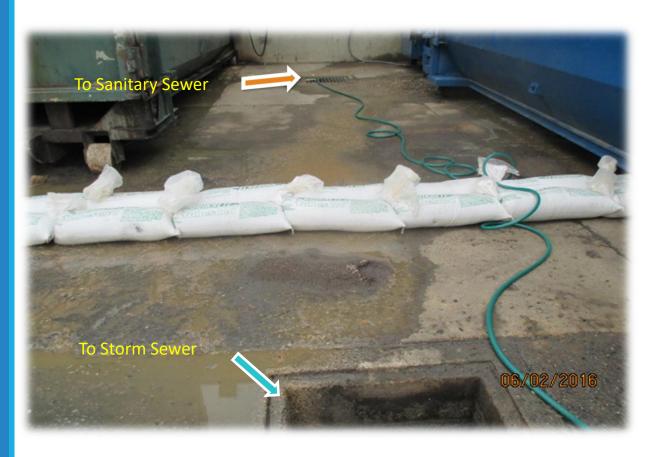


Stormwater Investigation: Impact to Storm Sewer Stopped









Stormwater Investigation: Impact to Storm Sewer Stopped









































Stormwater Investigation: Downstream Impact





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Stormwater Investigation: Permanent Correction









Stormwater Investigation: Permanent Correction









Stormwater Investigation: Permanent Correction





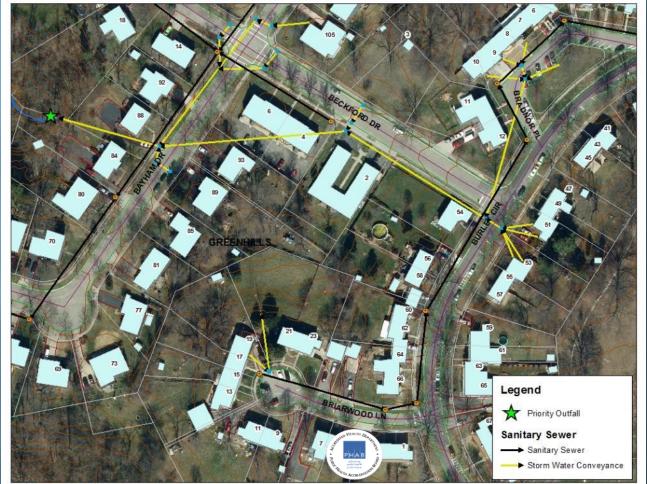




Stormwater Outfall Investigations 2017









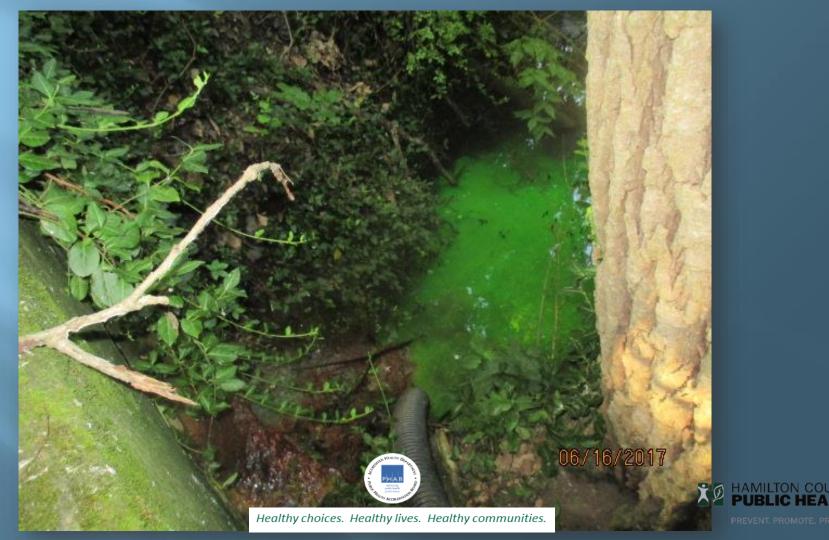


















Stormwater Outfall Investigations 2017















Stormwater Outfall Investigations 2017





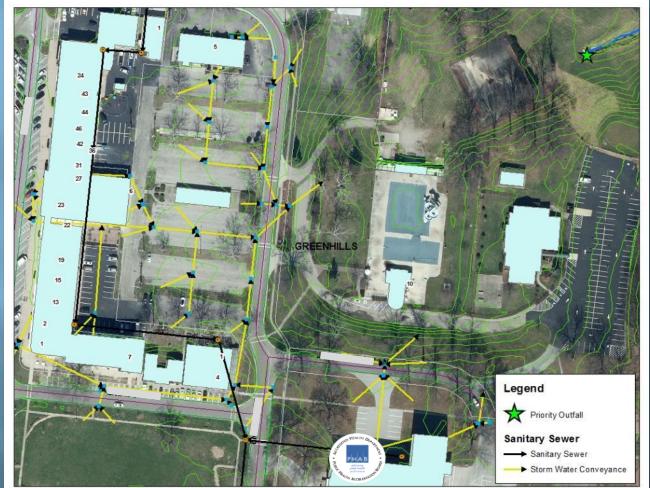
















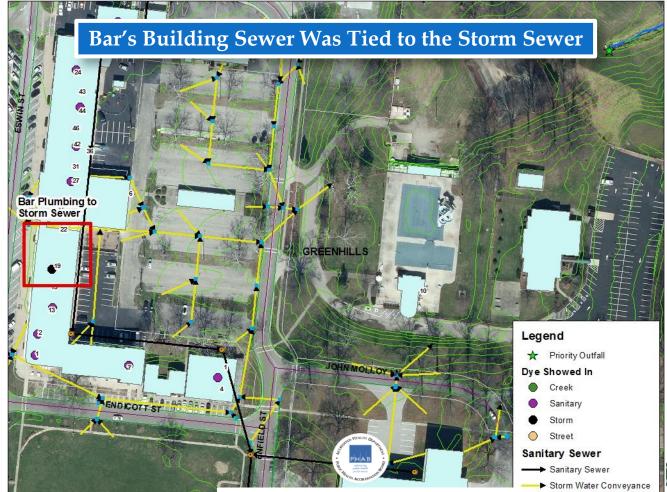




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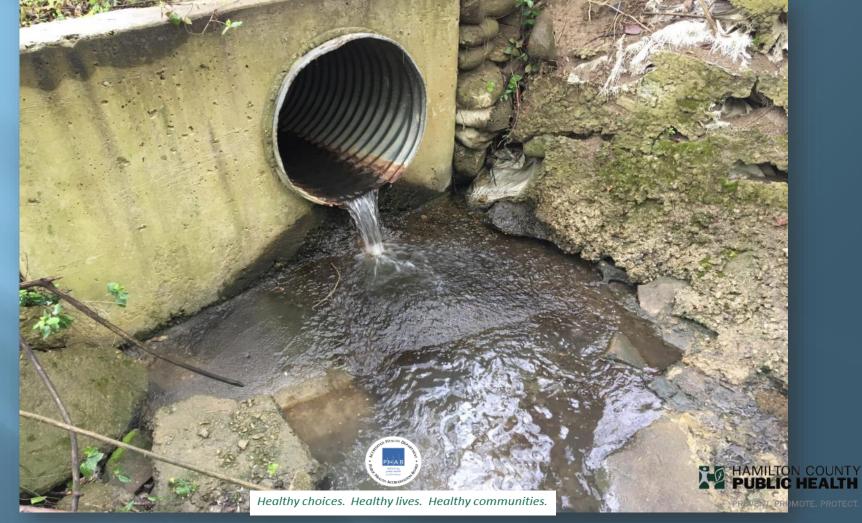
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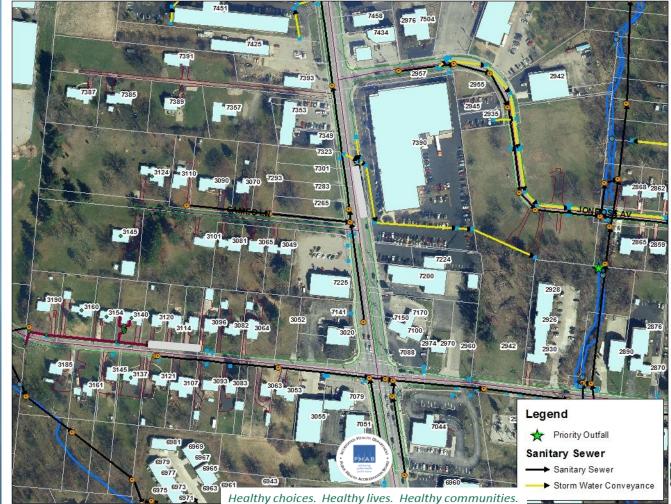














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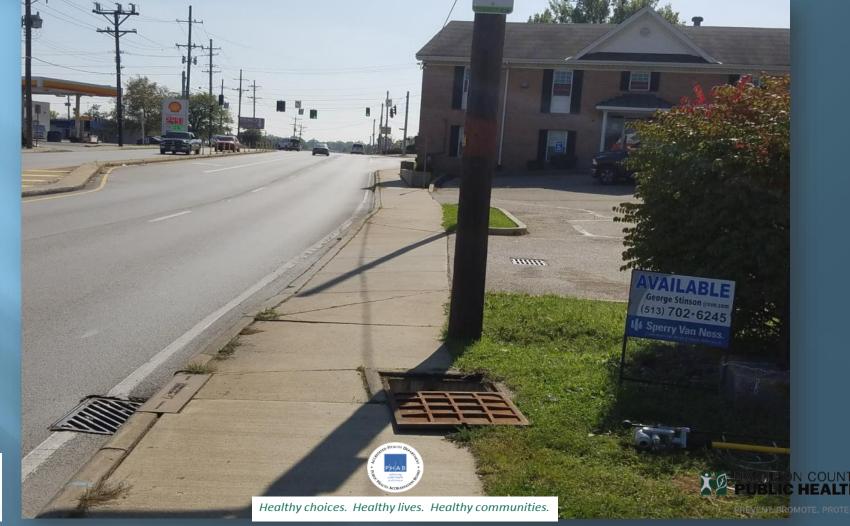






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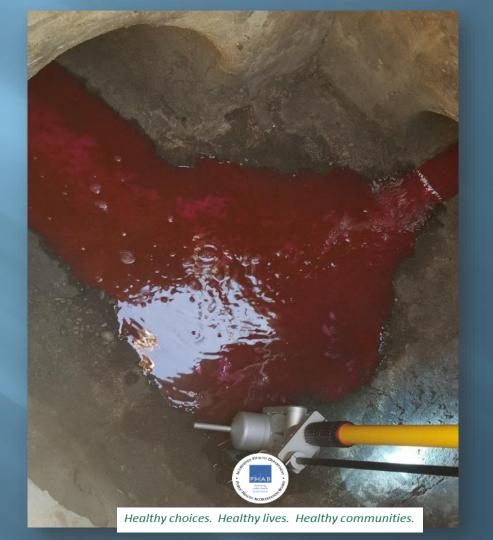
















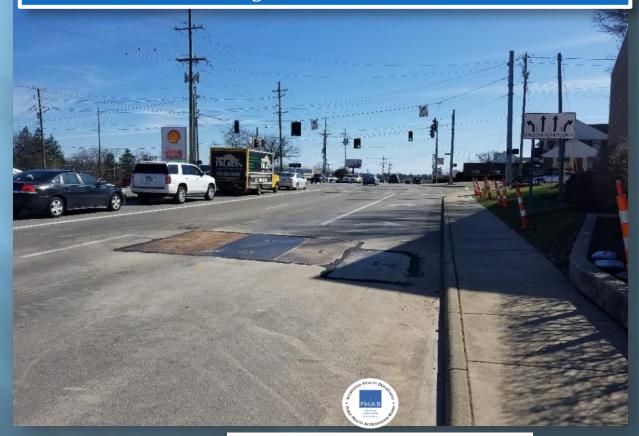




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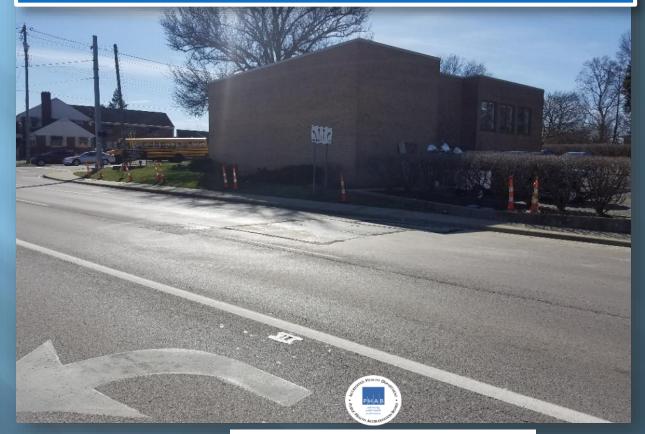
Dentist Office Building Sewer Was Tied to the Storm Sewer







Dentist Office Building Sewer Was Tied to the Storm Sewer

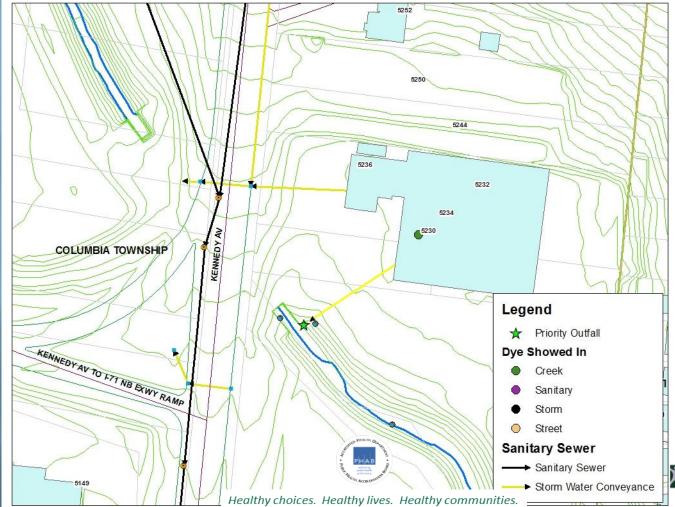














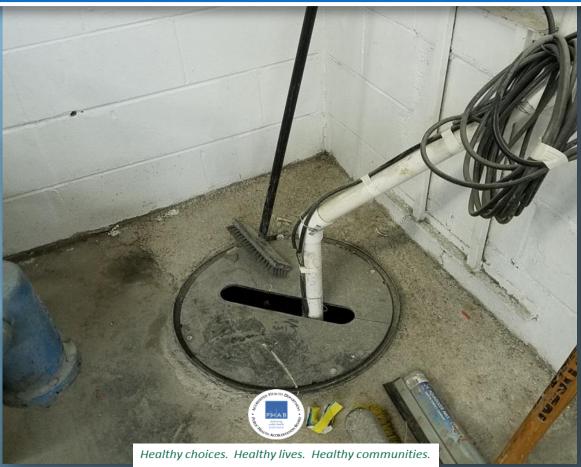






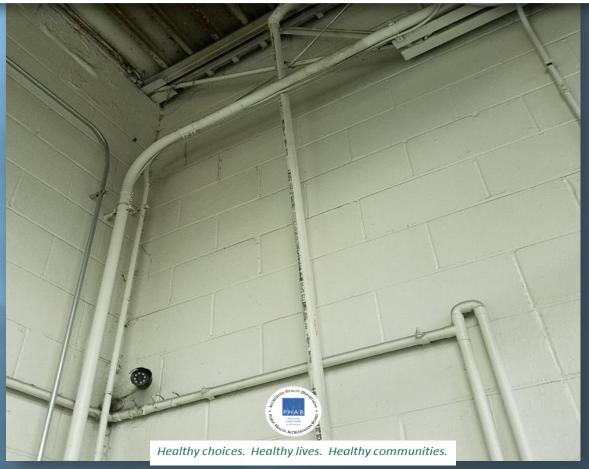






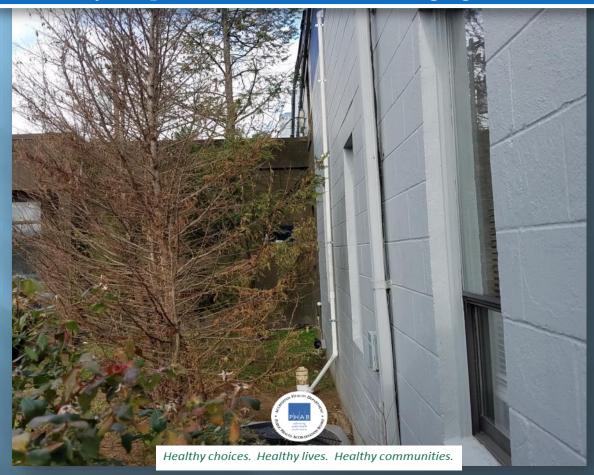


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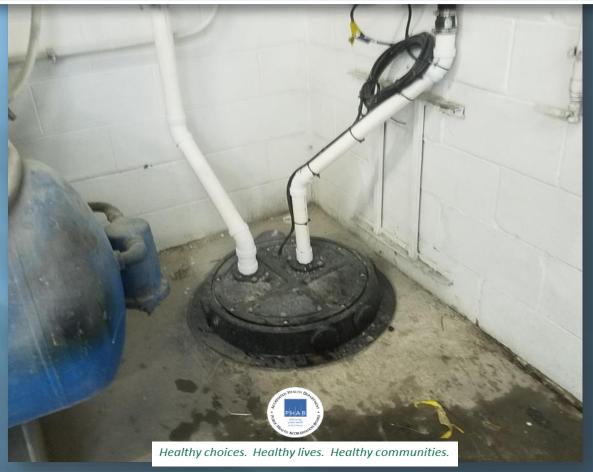
























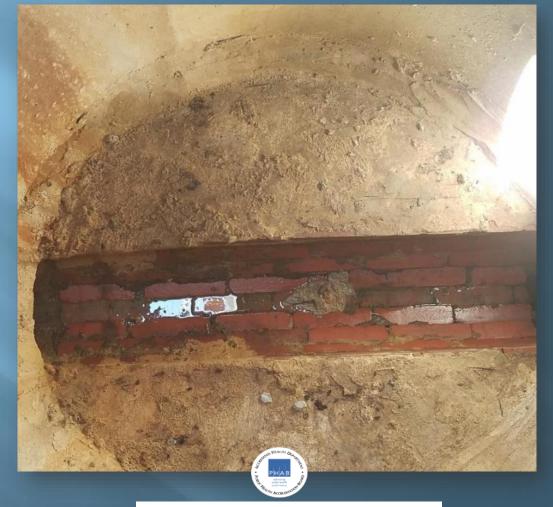






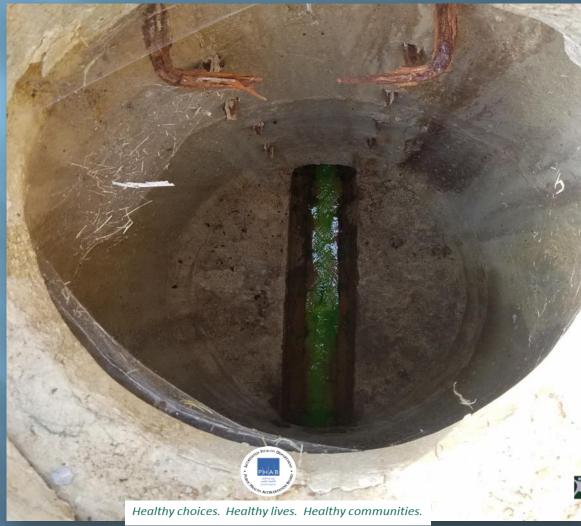
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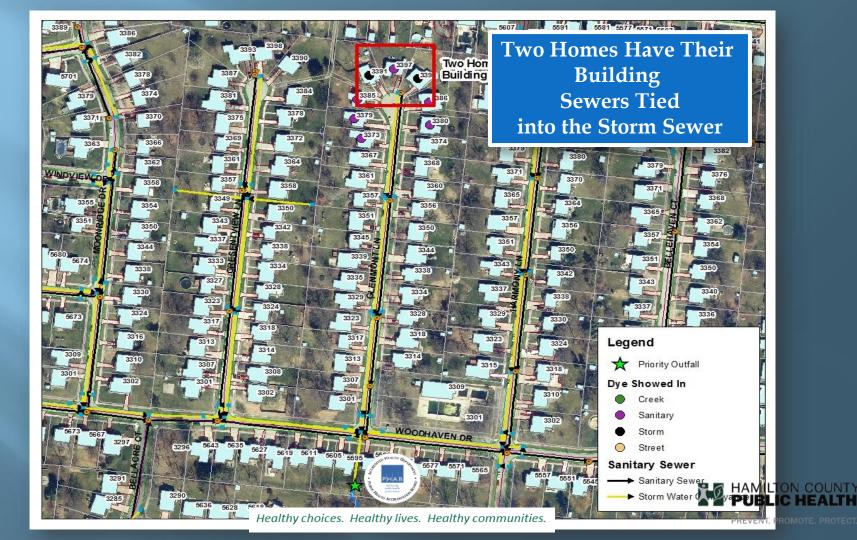






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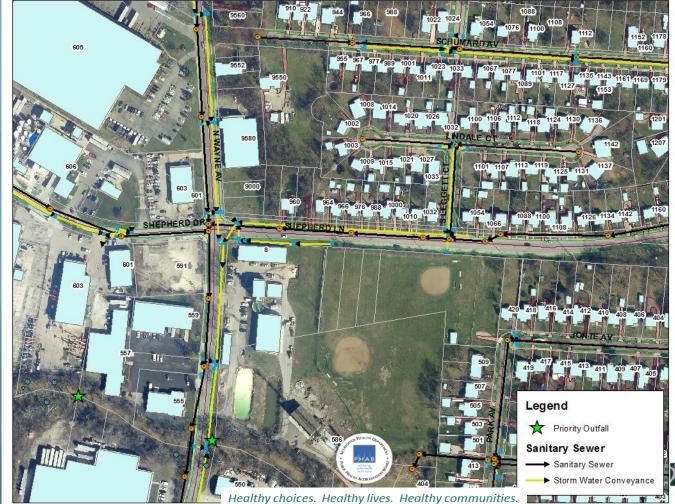






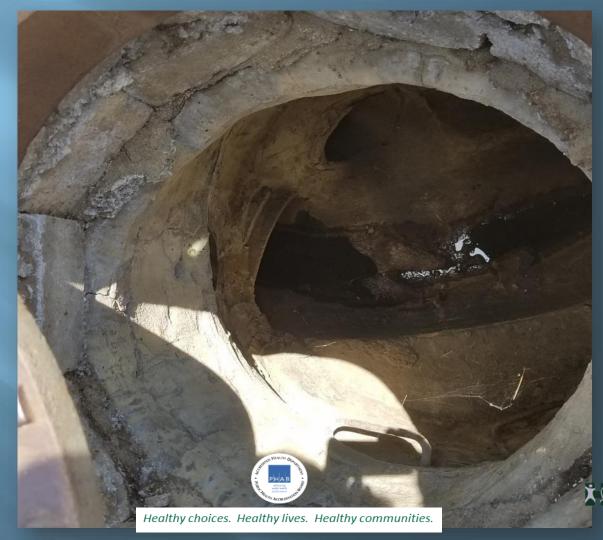








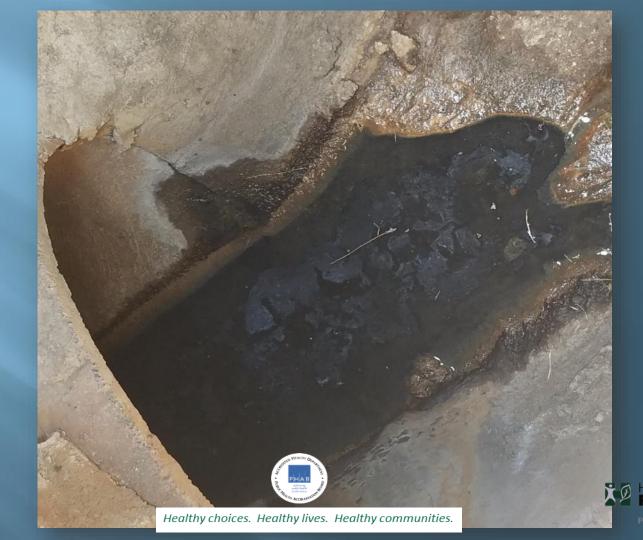
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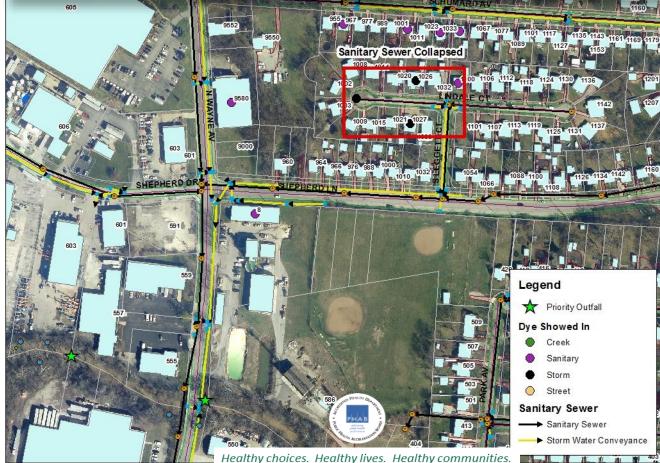
Sanitary Sewer had Collapsed and Sewage Was Entering the Storm Sewer







Sanitary Sewer had Collapsed and Sewage Was Entering the Storm Sewer





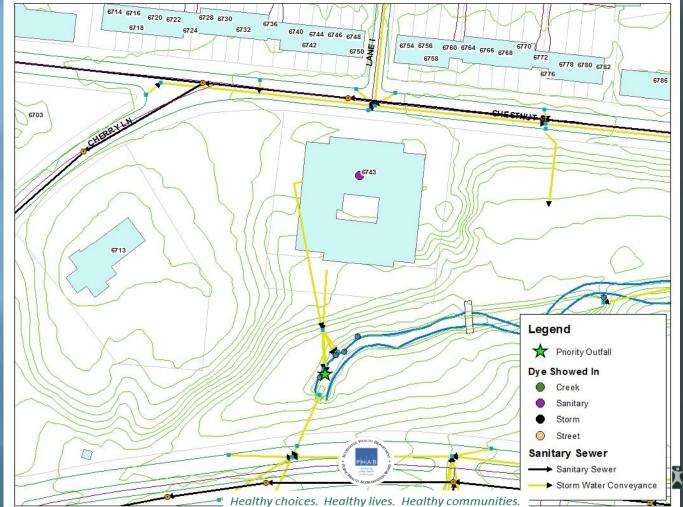
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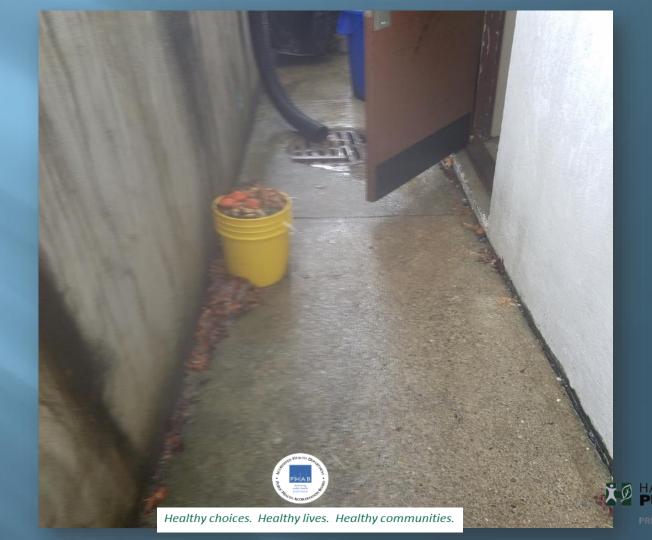






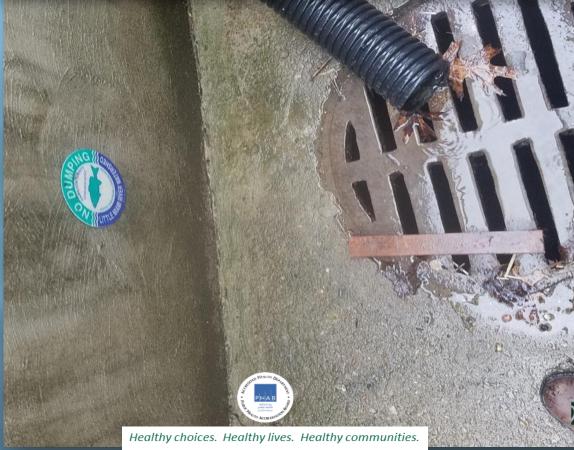
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PREVENT PROMOTE PROTECT





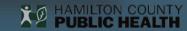
It is Believed Mop Water Was Pour into the Storm Sewer





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Swimming Pool Filter Backwash Water is Discharging to the Creek





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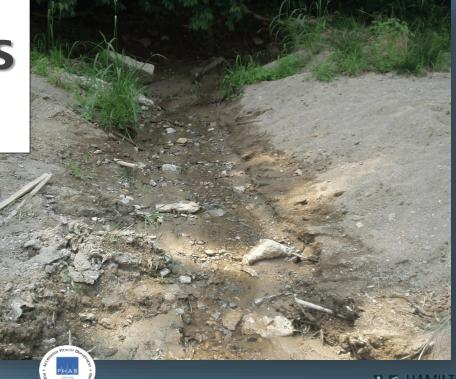
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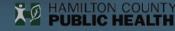




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Swimming Pool Filter Backwash Water is Discharging to the Creek





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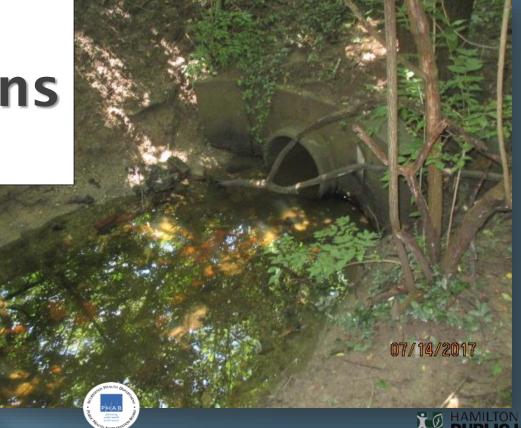


Swimming Pool Filter Backwash Water is Discharging to the Storm Sewer





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Swimming Pool Filter Backwash Water is Discharging to the Storm Sewer



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Questions?

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