Pittsburgh Water & Sewer Authority

Volunteers Field
Green Stormwater Infrastructure Project

May 13, 2019

PITTSBURGH HAS A STORMWATER MANAGEMENT PROBLEM

Pittsburgh averages 38 inches of rain a year

- Rainfall no longer falls evenly across the year
- More severe storms, dump more rain quicker

Pittsburgh's aging stormwater infrastructure was built for a different time, less population, & for communities that had more green space & less pavement

"Heavy Rains Cause Flash Flooding Across Western, PA Region," CBS Pittsburgh, June 20, 2018 at 4:36 pm

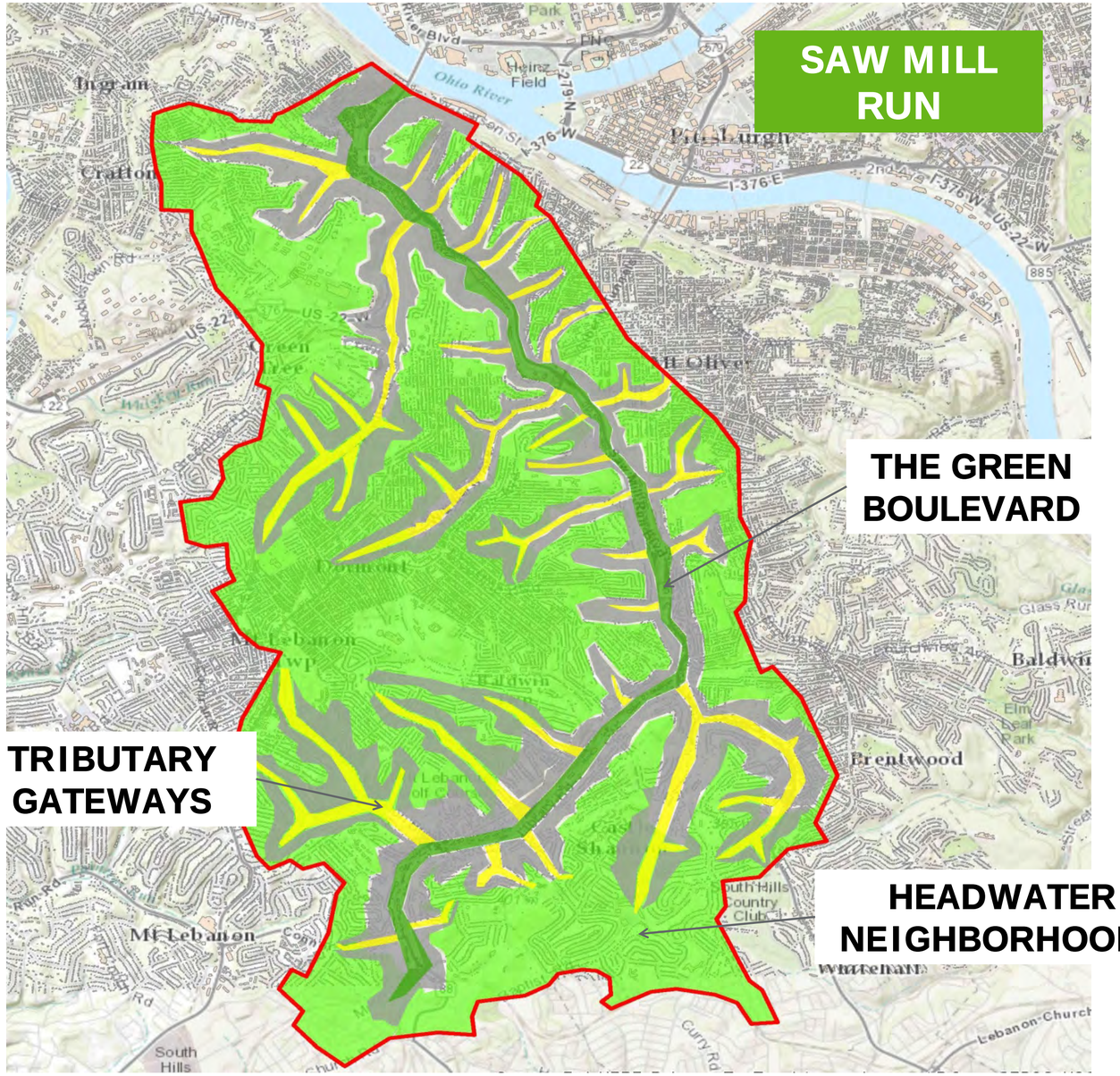
SAW MILL RUN WATERSHED

THE PROBLEM –

We have a **STORMWATER MANAGEMENT** problem resulting in:

- Poor Water Quality
- CSOs/SSOs
- Illicit Discharges – sewage in storm sewers
- Surface Flooding
- Basement Sewage Flooding
- Sewers that are 80 – > 100 years old
- Total Maximum Daily Load DEP Requirements

We need an **AFFORDABLE PLAN** to address **ALL OF THESE ISSUES**



INTEGRATED WATERSHED MANAGEMENT PLAN GOAL

Complement traditional, end-of-pipe solution for the CSOs & SSOs in the watershed with a combination of green, gray and watershed-wide elements that will:

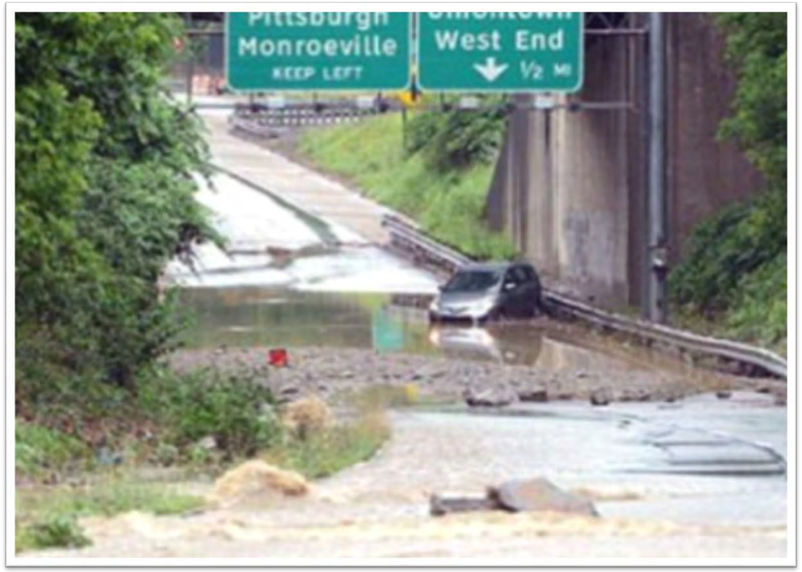
Achieve regulatory compliance

- Address other water quality & quantity issues,
- Improve quality of life,
- Contribute to economic development

INTEGRATED WATERSHED MANAGEMENT PRIORITIES

1 **Reduce peak flows** and **mitigate flooding** in the watershed

2 **Stabilize and Restore Streambank** to improve aquatic habitat, flow regime, and reaeration



INTEGRATED WATERSHED MANAGEMENT PRIORITIES

3 **Use Green Stormwater Infrastructure** to treat stormwater to reduce sediment and phosphorous

4 **Eliminate sources of dry and wet weather fecal coliform bacteria** getting into the stream, (illicit discharges).

INTEGRATED WATERSHED MANAGEMENT PRIORITIES

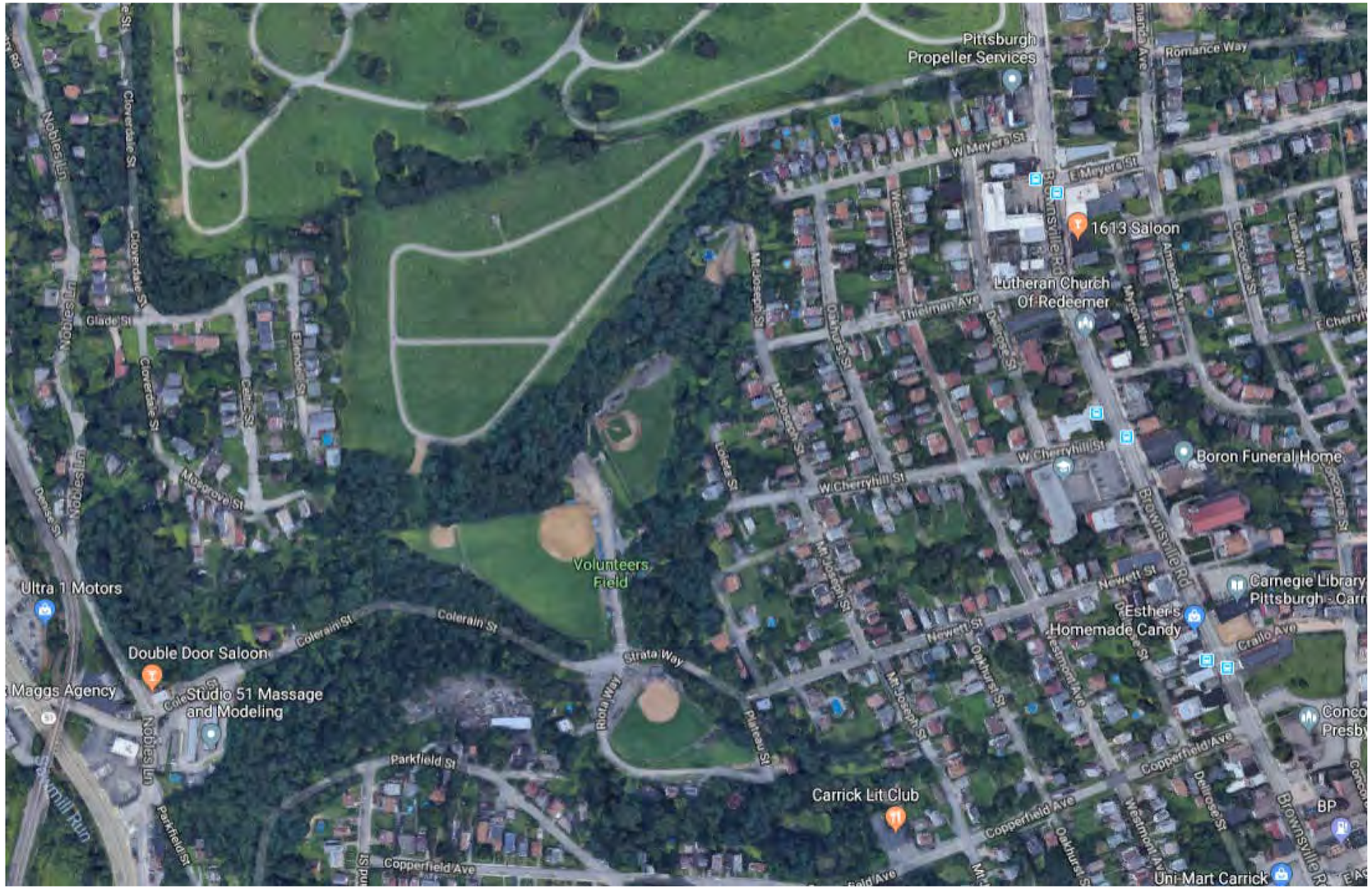
5 **Rehabilitate infrastructure** that may allow sewage to enter the stream or allows I/I into the separate sanitary sewer system.

6 **Treat largest acid mine drainage sources along** Route 51/Library Rd. intersection and sites in Mt. Washington.

WHAT IS GREEN STORMWATER INFRASTRUCTURE?

GREEN STORMWATER INFRASTRUCTURE

VOLUNTEERS FIELD PROJECT UPDATE



PROJECT OBJECTIVES

- Develop a Neighborhood Stormwater Plan
- Identify an Early Action Project
- Develop Green Stormwater Infrastructure (GSI) concept Design to:
  - Reduce sediment and phosphorus loads
  - Capture the first 1.5 inches of rainfall from the contributing drainage area
  - Reduce the peak flows and volume rushing to SMR

NEIGHBORHOOD STORMWATER PLAN

- 130 acre drainage area
  - ~42 impervious acres
- 130 Million gallons runoff per year
- TMDL- Pollutant Loading (~38” annual rainfall)
  - 159,000 lbs TSS
  - 420 lbs TP
- Loading (typical rainfall event 1.5”)
  - 6,300 lbs TSS
  - 17 lbs TP

EARLY ACTION PROJECT

Volunteers Field

- Early Action project
- Bioretention Area (GSI-1) located along Plateau St. and Riota Way
- ~1- acre Impervious Area Treated
- Drainage improvements at BMP outfall

EARLY ACTION PROJECT

Volunteers Field Existing Conditions

EARLY ACTION PROJECT

Volunteers Field Existing Conditions

EARLY ACTION PROJECT
Volunteers Field Proposed Conditions

- Shallow, vegetated areas collecting & filtering runoff
- 24-48hr drain time. No standing water during dry periods.
- Vegetated to promote evapotranspiration and pollutant reduction
- Low maintenance landscaping

EARLY ACTION PROJECT
Volunteers Field

TIMELINE: Bioretention (GSI-1)

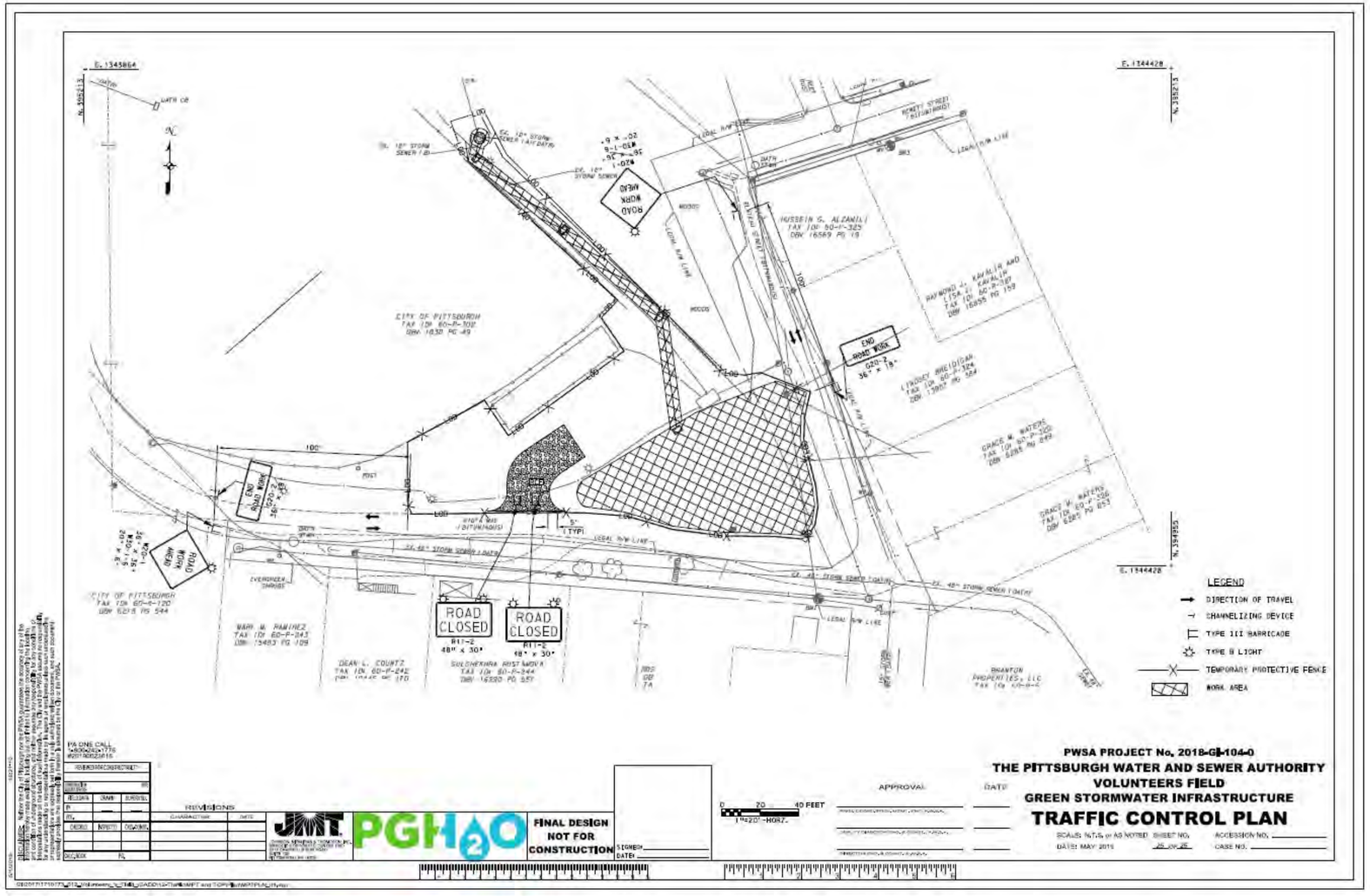
- Bid Phase:

  May – June 2019

- Anticipated Construction Start:
  July/August 2019

- Anticipated Completion:
  December 2019

EARLY ACTION PROJECT
Volunteers Field Construction



What to expect:

- Minimal obstructions
- 7:00 am – 6:00 pm

  Monday-Friday

FIELD DRAINAGE / SEDIMENT REDUCTION

Volunteers Field

- Sedimentation observed at Fields 1 & 2
- Drainage patterns causing excessive sediment loading
- Existing inlets clogged with sediment
- Immediate action to reduce sediment in park area
- Inlets in playing field

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Volunteers Field

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FIELD DRAINAGE / SEDIMENT REDUCTION

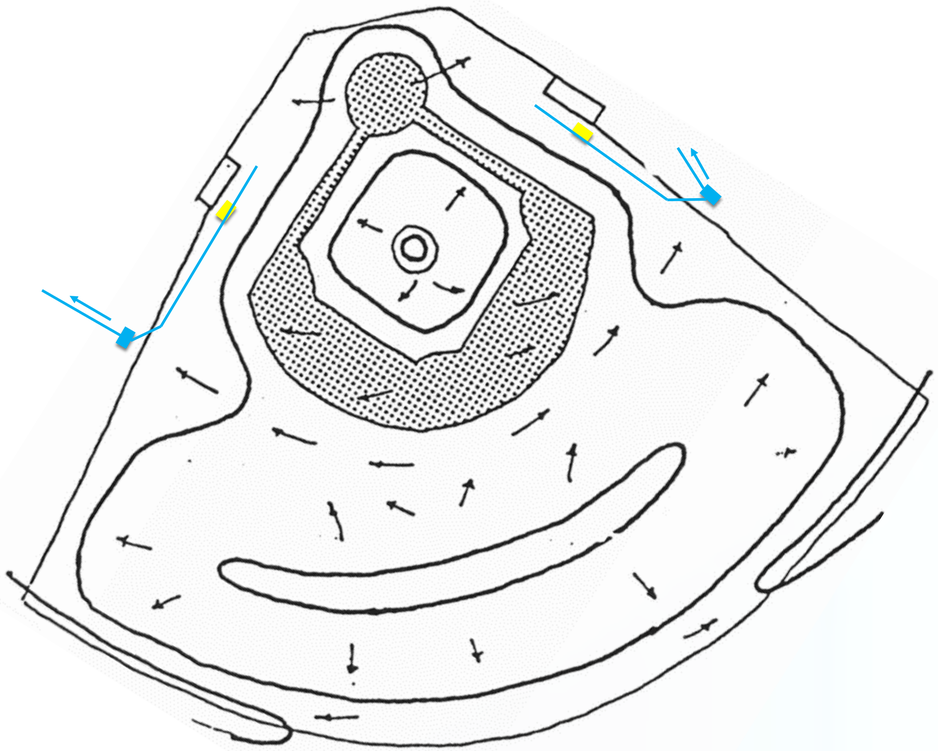
Volunteers Field

Investigated 3 Options for Sediment Reductions at Fields 1 & 2:

- Option 1 – Inlet filter bags in existing catch basins
- Option 2 – Re-grade the ballfields, install new inlets / drains
- Option 3 – Install subsurface drainage – outfield areas only

OPTION 2 – RE-GRADING THE BALLFIELDS

Existing Drainage at VF #2



Typical Grading Plan – VF 1 & 2

FIELD DRAINAGE / SEDIMENT REDUCTION

Volunteers Field

TIMELINE: Re-grading the Ballfields

- Design Phase Completion: **September 2019**
- Anticipated Construction Start: **November 2019**
- Anticipated Completion: **March 2020**

FIELD DRAINAGE / SEDIMENT REDUCTION

Volunteers Field

What to expect

- **Restricted use until 2021** to allow vegetation to establish
- 7:00 am – 6:00 pm, Monday-Friday

SHARED STORMWATER RESPONSIBILITIES

We are all in this together. There are civic and private responsibilities for managing stormwater. Collectively we can create flood prepared communities that are safer, healthier places to live.

Pittsburgh Water & Sewer Authority

Should you have any questions, do not hesitate to contact:

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To receive project updates, leave your email on the sign-in sheet.