



Pittsburgh  
Water & Sewer  
Authority

**THOMAS AND MCPHERSON GREEN  
INFRASTRUCTURE PROJECT**

Point Breeze North and Point Breeze  
Neighborhoods

October 2, 2019

# AGENDA

- Welcome and Introductions
- Project Overview & Goals
- Recommended Stormwater Strategies
- Questions and Answers
- Adjourn



At the turn of the 20<sup>th</sup> century, Pittsburgh embarked on its biggest infrastructure improvement campaign, building sewers, water lines, roads, and power lines that created the city we know today.





# PITTSBURGH HAS A STORMWATER MANAGEMENT PROBLEM

- Averages 38 inches of rain a year
  - Rainfall no longer falls evenly across the year
  - More severe storms dump more rain quicker
- Aging stormwater infrastructure was built for a different time, less population, and communities that had more green space and less pavement

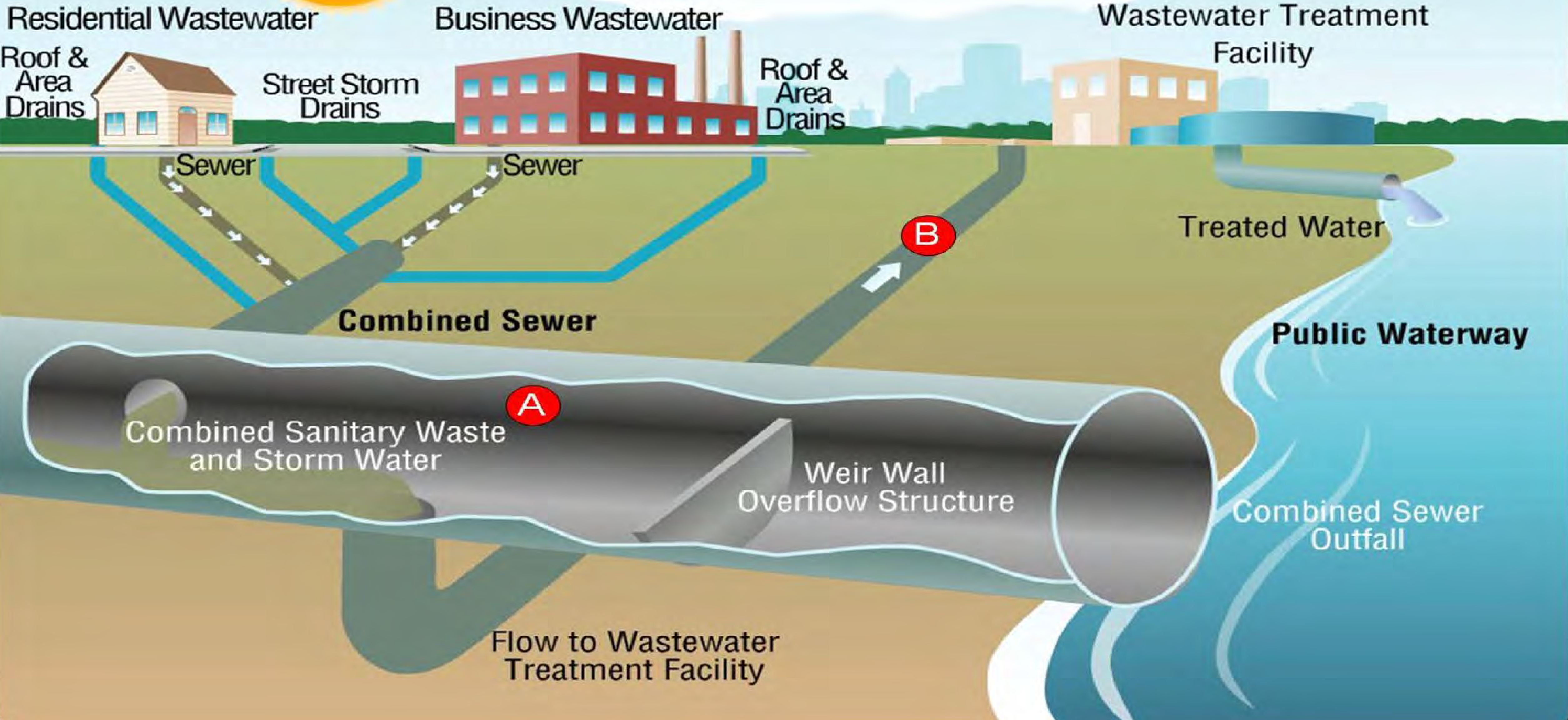


*“Heavy Rains Cause Flash Flooding Across Western, PA Region,” CBS Pittsburgh, June 20, 2018 at 4:36 pm*



# COMBINED SEWER SYSTEM

Dry Weather





# COMBINED SEWER SYSTEM

Wet Weather





# WE HAVE A STORMWATER MANAGEMENT PROBLEM

- Poor water quality
- CSOs/SSOs
- Illicit discharges – sewage in storm sewers
- Surface flooding
- Basement sewage flooding
- Sewers that are 80 – 100+ years old

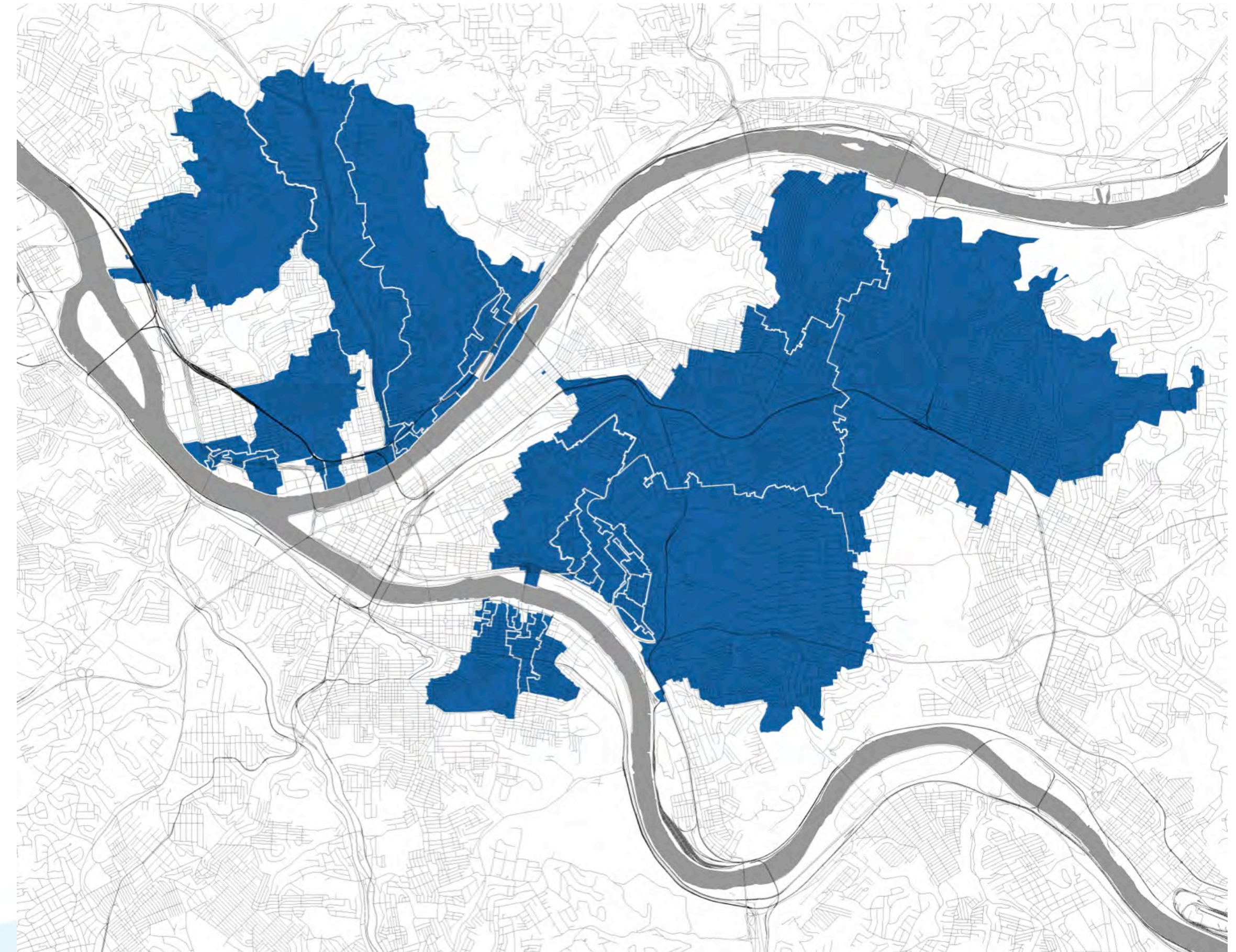
**We need an AFFORDABLE PLAN  
to address ALL OF THESE ISSUES**





# GREEN FIRST PLAN

We need to keep rainwater out of the system. We can be most effective by focusing efforts on the sheds that contribute the most to the system.





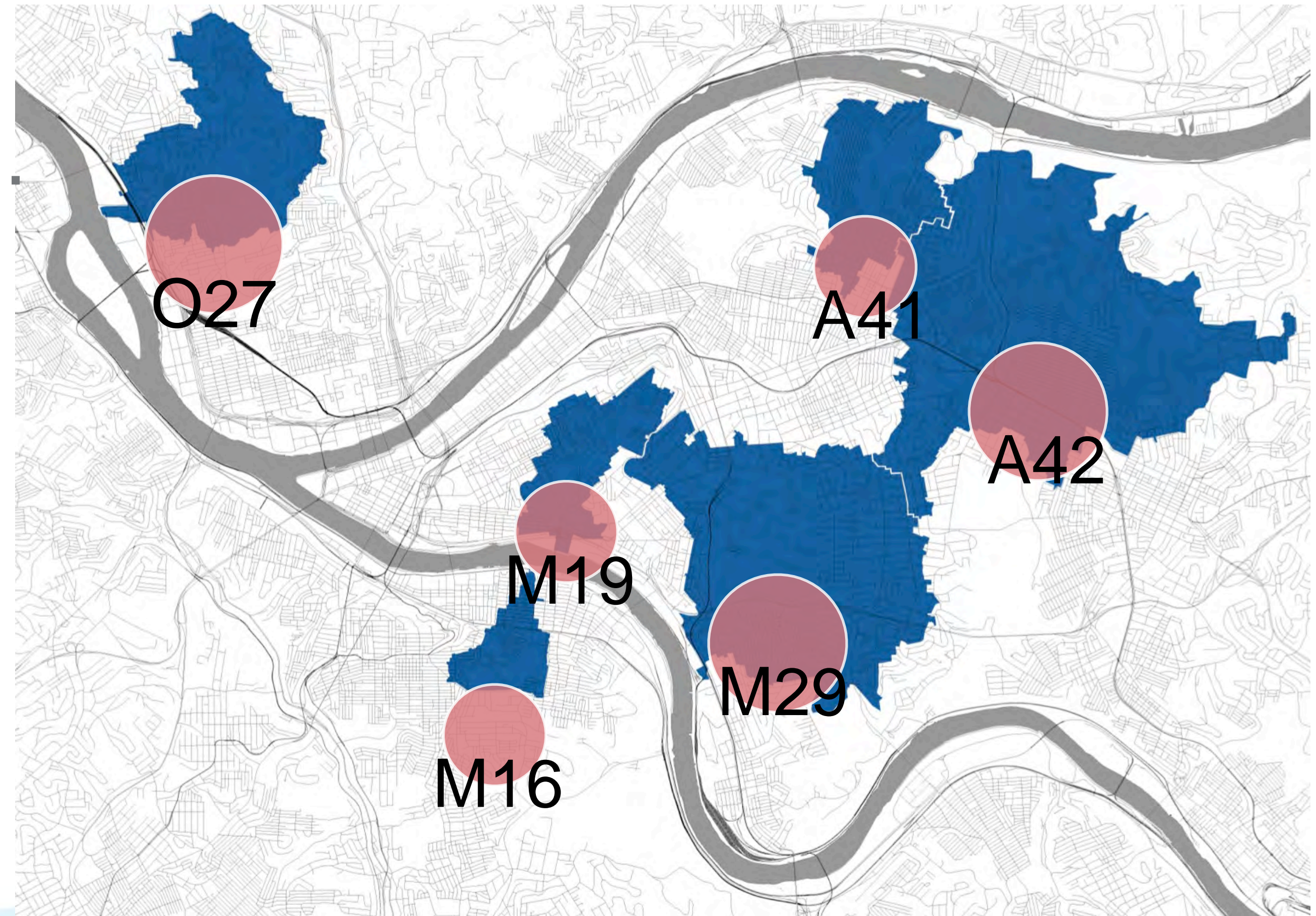
# GREEN FIRST PLAN

Identified the **top 30 sheds** and overlaid other criteria...

RISK	LOWER RISK
OPPORTUNITY	EASY TO IMPLEMENT
DEVELOPMENT	HIGH ACTIVITY
SYNERGIES	MULTIPLE BENEFITS

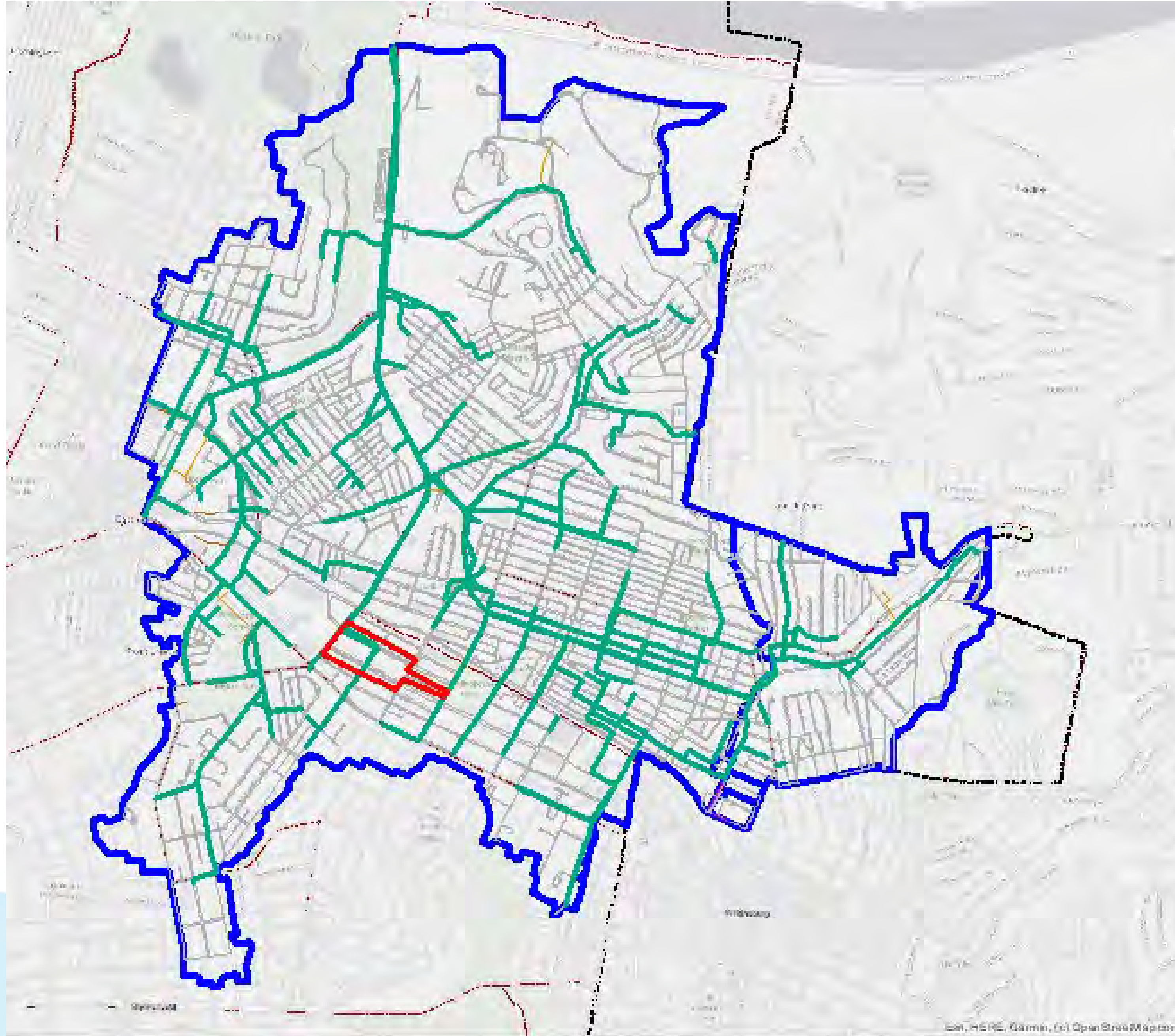
and chose **6 priority sheds**

Goal: Comprehensive watershed-scale solutions





# A-42 Sewershed



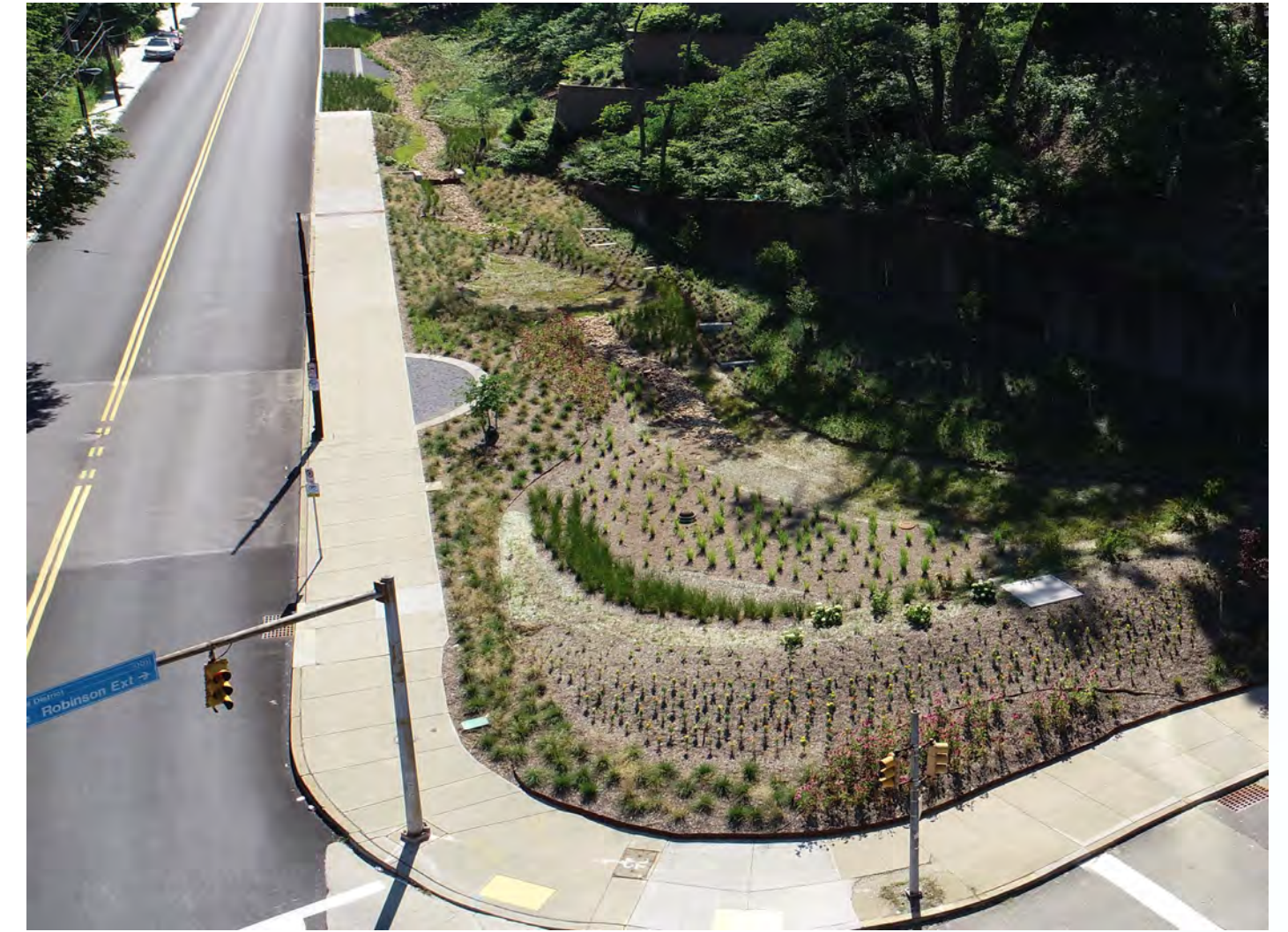


# WHAT IS GREEN STORMWATER INFRASTRUCTURE?

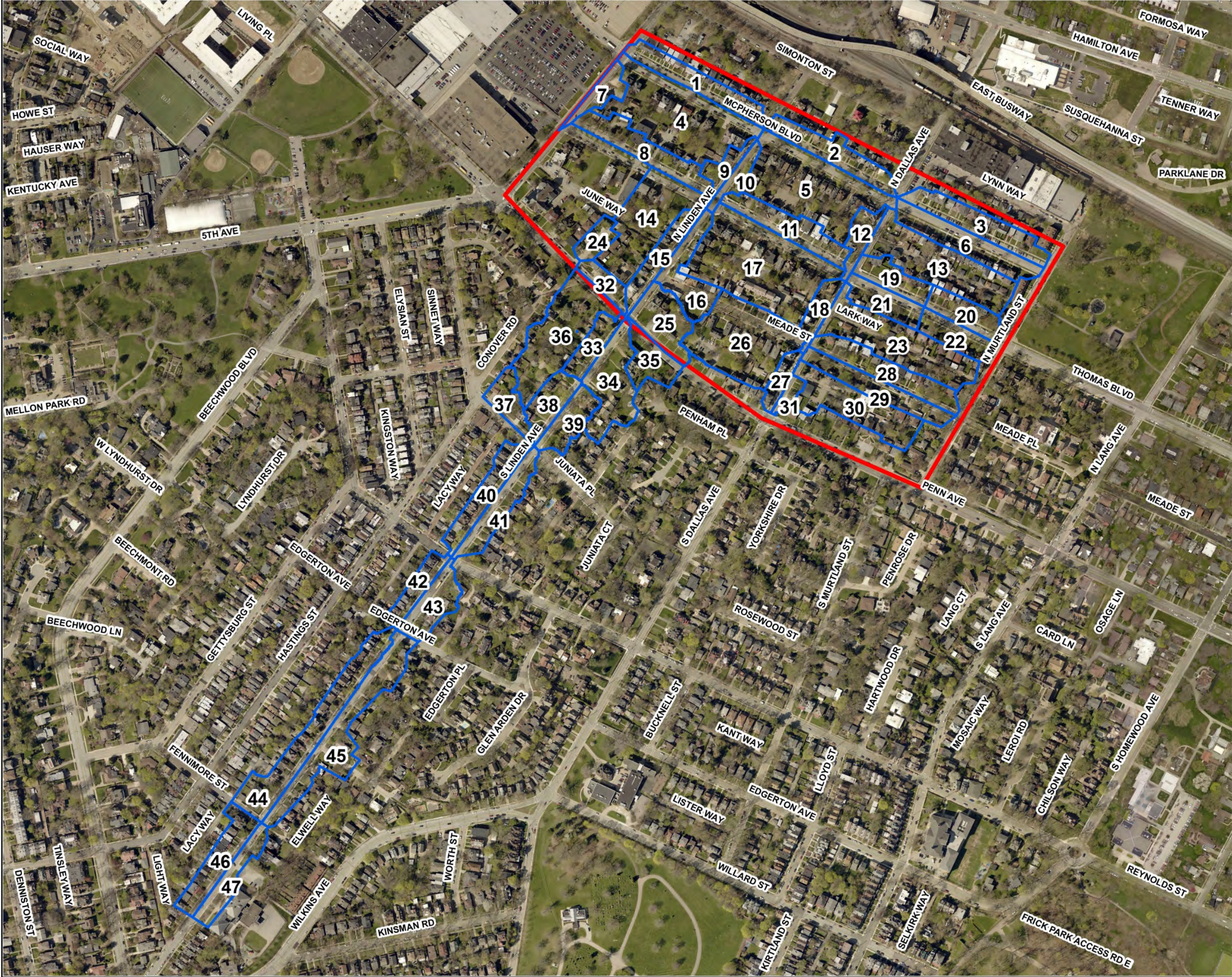





# GREEN STORMWATER INFRASTRUCTURE









**Thomas & McPherson  
Green Infrastructure Project**


**Total Project Area**

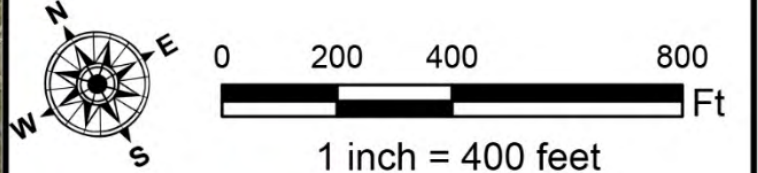
January 2019

**Legend**


ModifiedSubcatchments

Project Boundary





0 200 400 800  
Ft  
1 inch = 400 feet



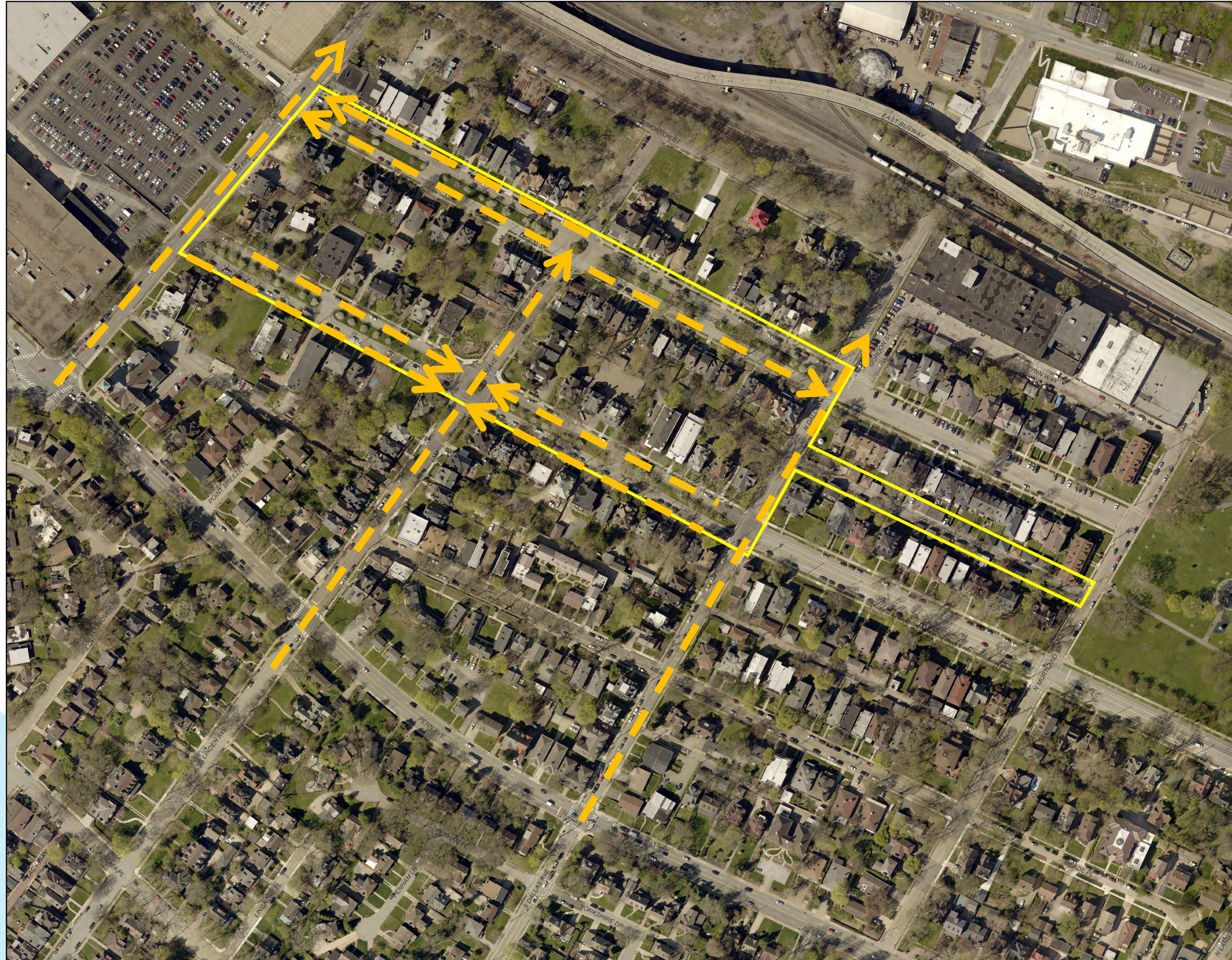
Evaluation Included:

- 47 sub-basins
- 63.6 acres of drainage area

Preliminary Design Evaluation



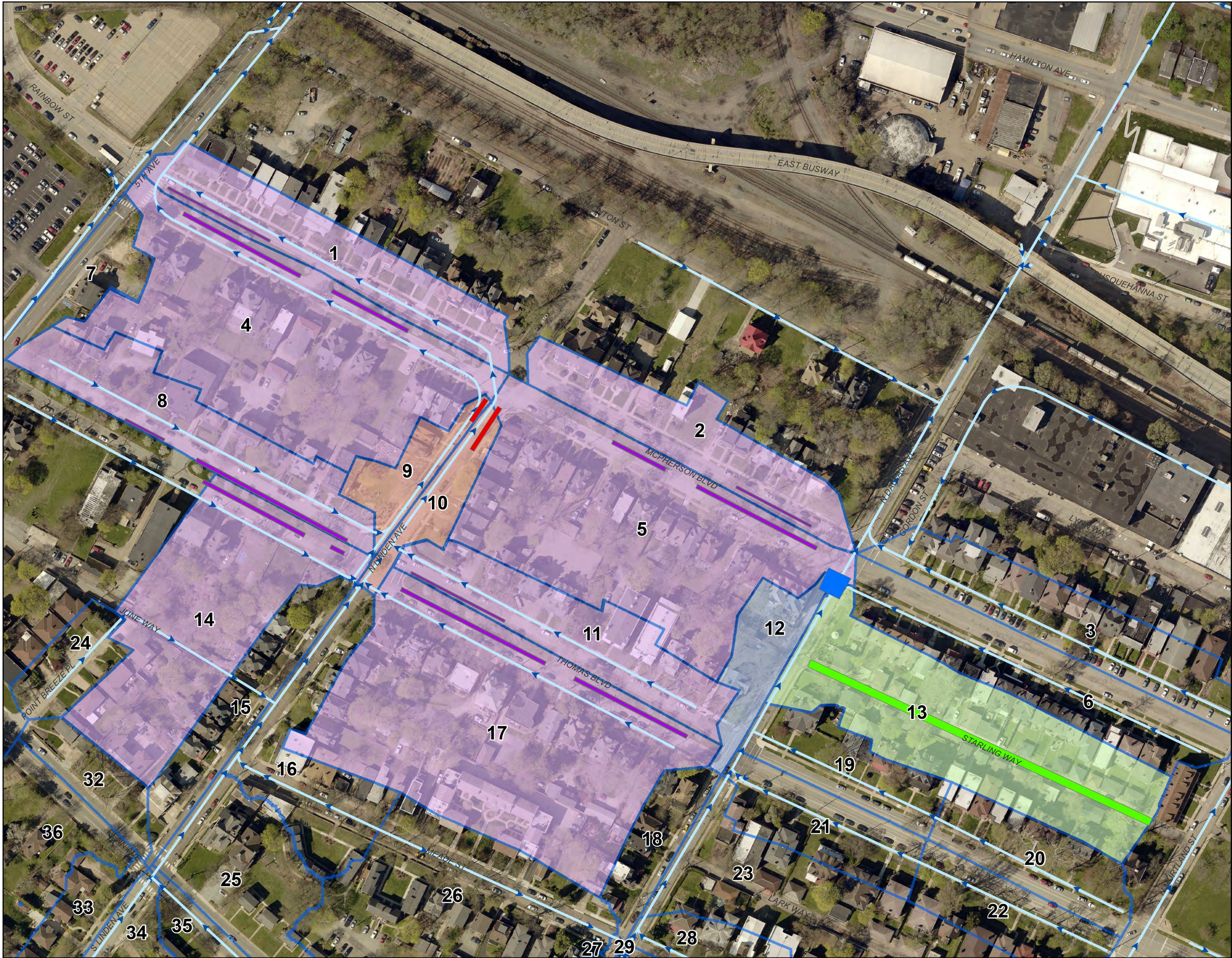
# Combined Sewer Network and Runoff Surface Flow Path



## LEGEND

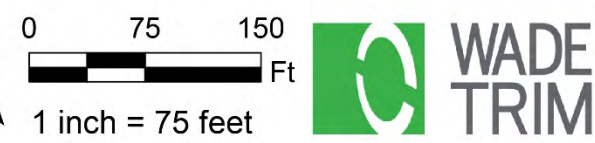
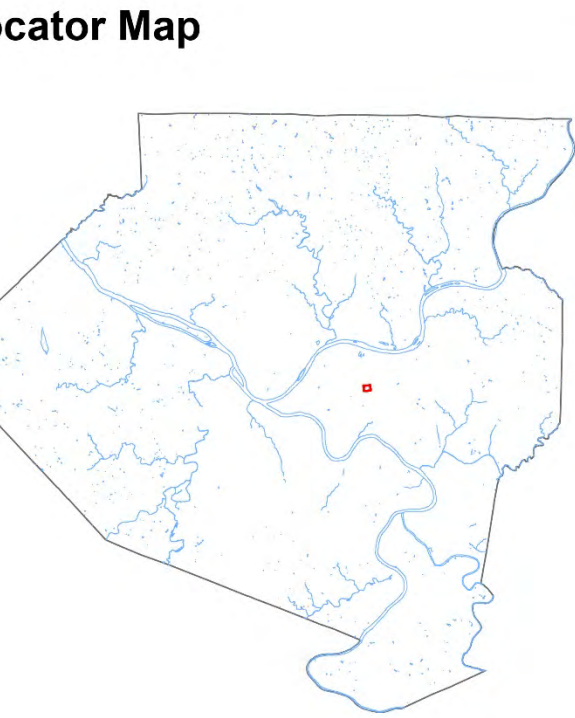
← — — — Combined Sewer Alignment and Flow Pattern





Thomas & McPherson  
Green Infrastructure Project  
**Phase 1 Project Area  
Drainage Areas and  
Associated BMPs**  
October 2019

- Legend**
- Combined Sewer
  - Phase 1 Drainage to Permeable Pavers
  - Phase 1 Drainage to Alleyway
  - Phase 1 Drainage to Underground Storage
  - Phase 1 Drainage to Median Storage
  - Drainage Area Subcatchments
- BMP Type**
- Green Alley
  - Permeable Pavers
  - Median Storage
  - Underground Storage



# Drainage Areas and GSI







# Recommended GSI Technologies

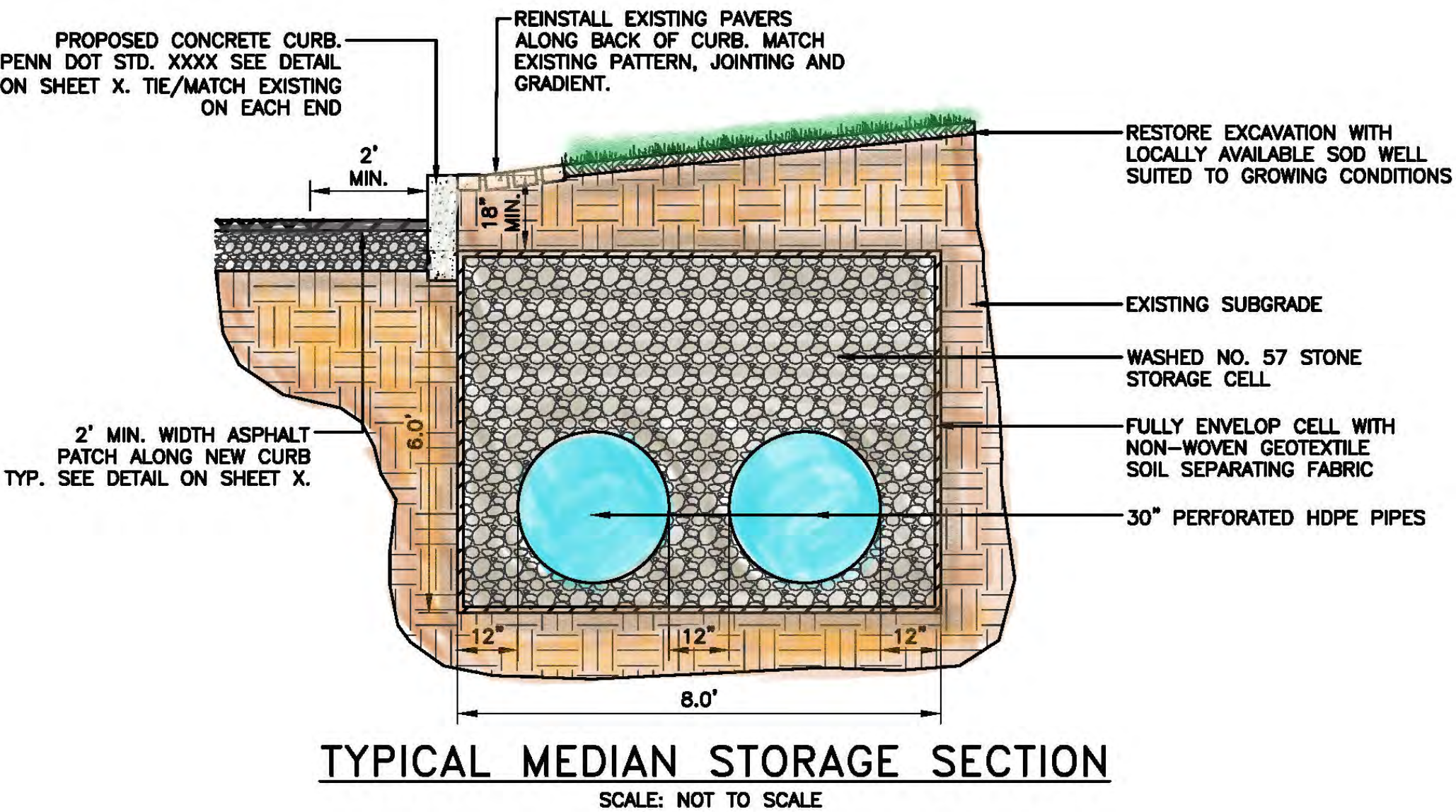






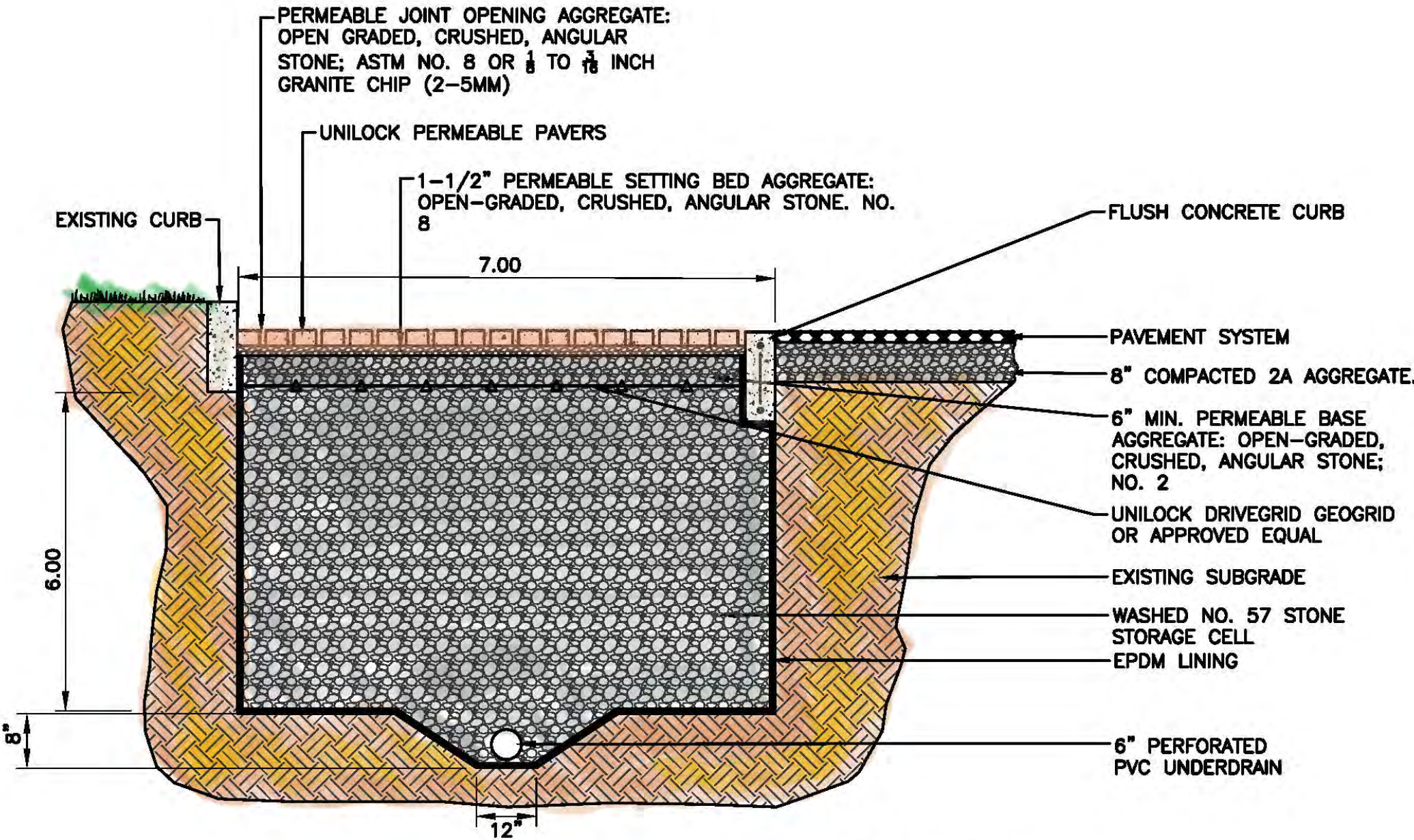


# Median Storage





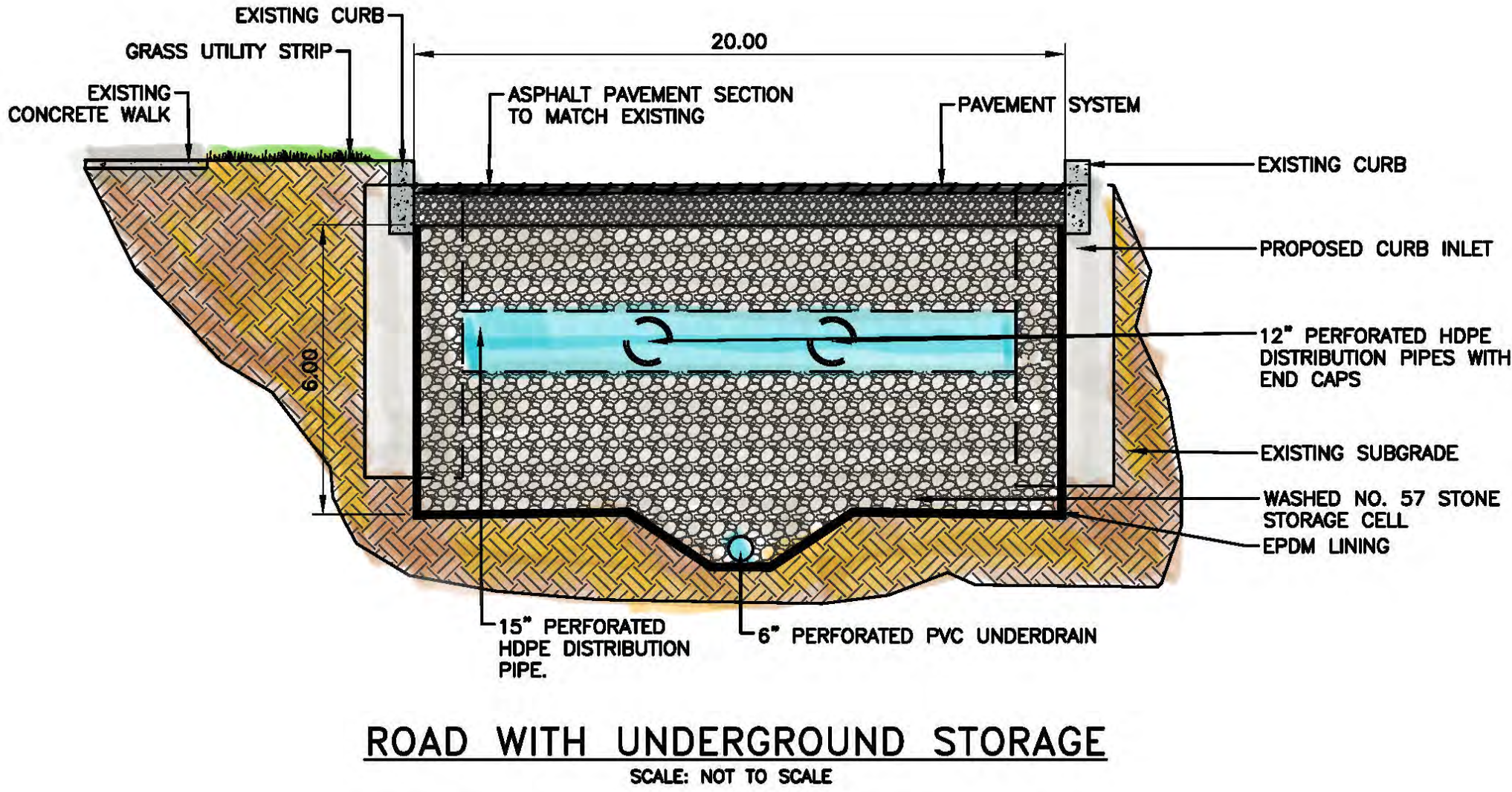
# Permeable Paver Parking Lanes



PERMEABLE PAVER PARKING SECTION 2  
SCALE: NOT TO SCALE

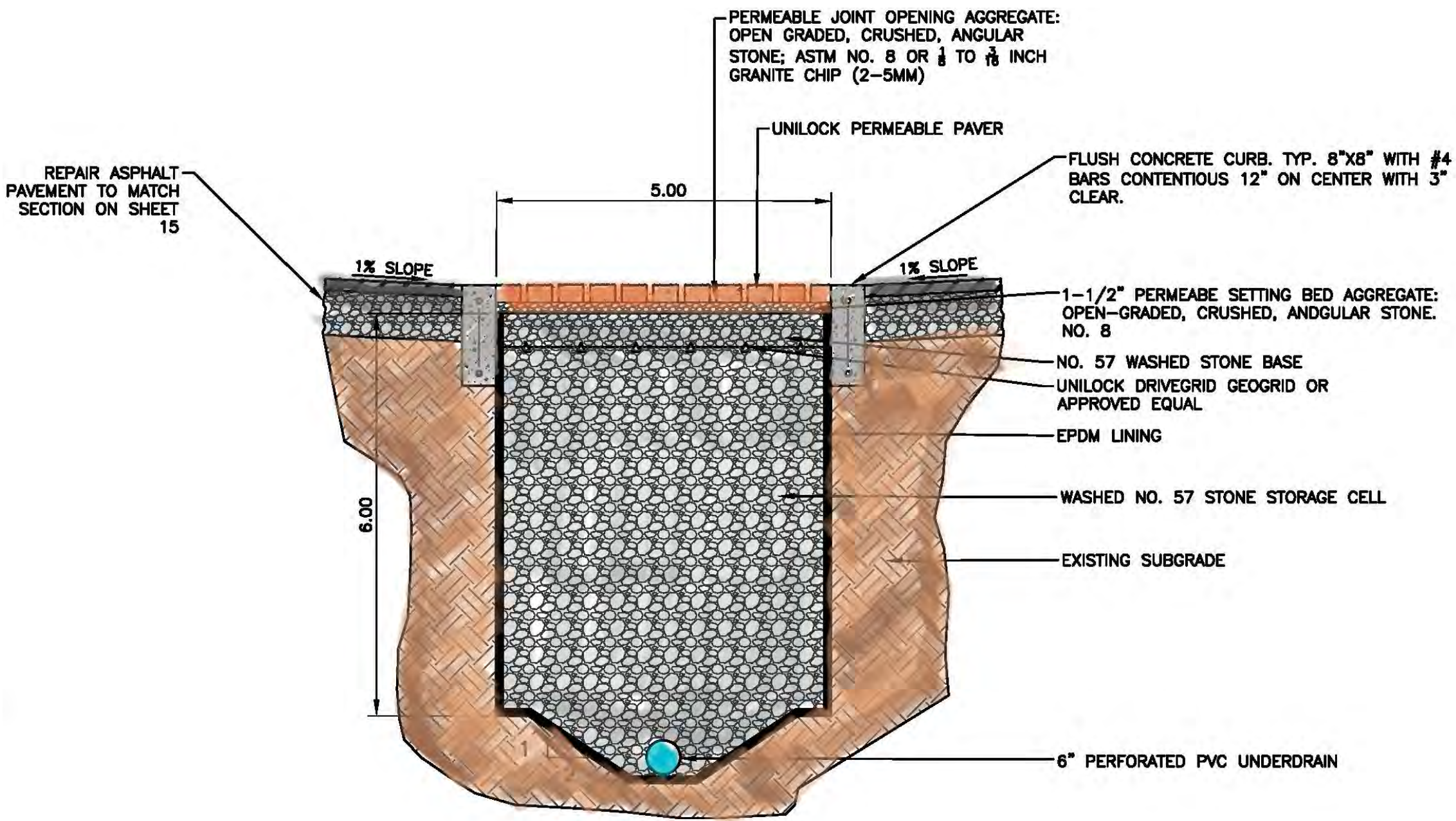


# Underground Storage





# Green Alley/Way: Permeable Pavers

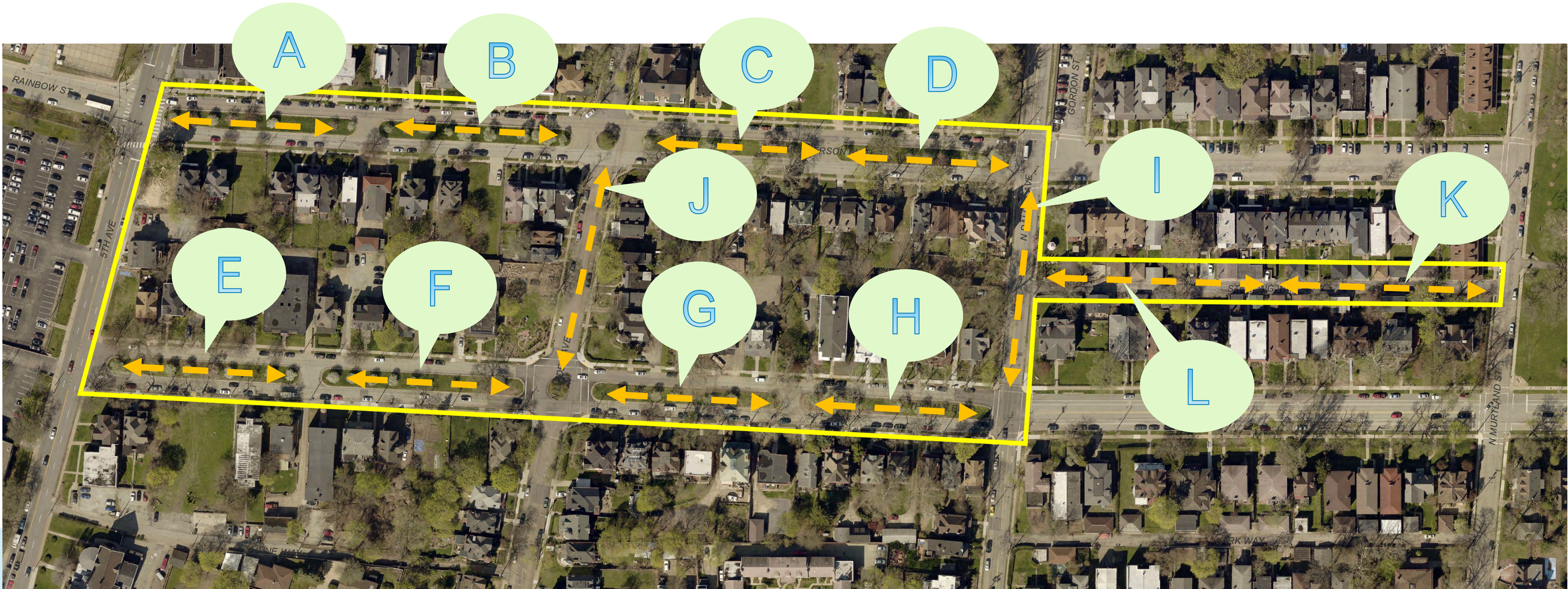




# Construction Sequencing

LEGEND

**A** Construction Phase Sequence





# CURRENT PROJECT DESIGN AND CONSTRUCTION SCHEDULE

- 60% Final Design Plans Complete                      October 2019
- 90% Final Design Plans Complete                      December 2019
- 100% Final Design Plans Complete                      February 2020

*Construction for Phase 1 Estimated Spring 2020 – Fall 2020*



# 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.**