

PITTSBURGH WATER AND SEWER AUTHORITY (PWSA) STRATEGIC PLAN FOR STORMWATER



Ambassador Cohort 2 Meeting
May 9, 2022

PITTSBURGH WATER AND SEWER AUTHORITY (PWSA) STRATEGIC PLANNING TEAM

PennPraxis + The Water Center at Penn

water systems analysis and planning, policy and partnership design, communication

AKRF Inc.

engineering and technical engagement

Grounded Strategies stakeholder engagement

Heather Sage local policy communication

Moonshot Missions water economics and equity strategies

Andropogon Associates land use planning and design

CMU Center for Engineering & Resilience for Climate Adaptation

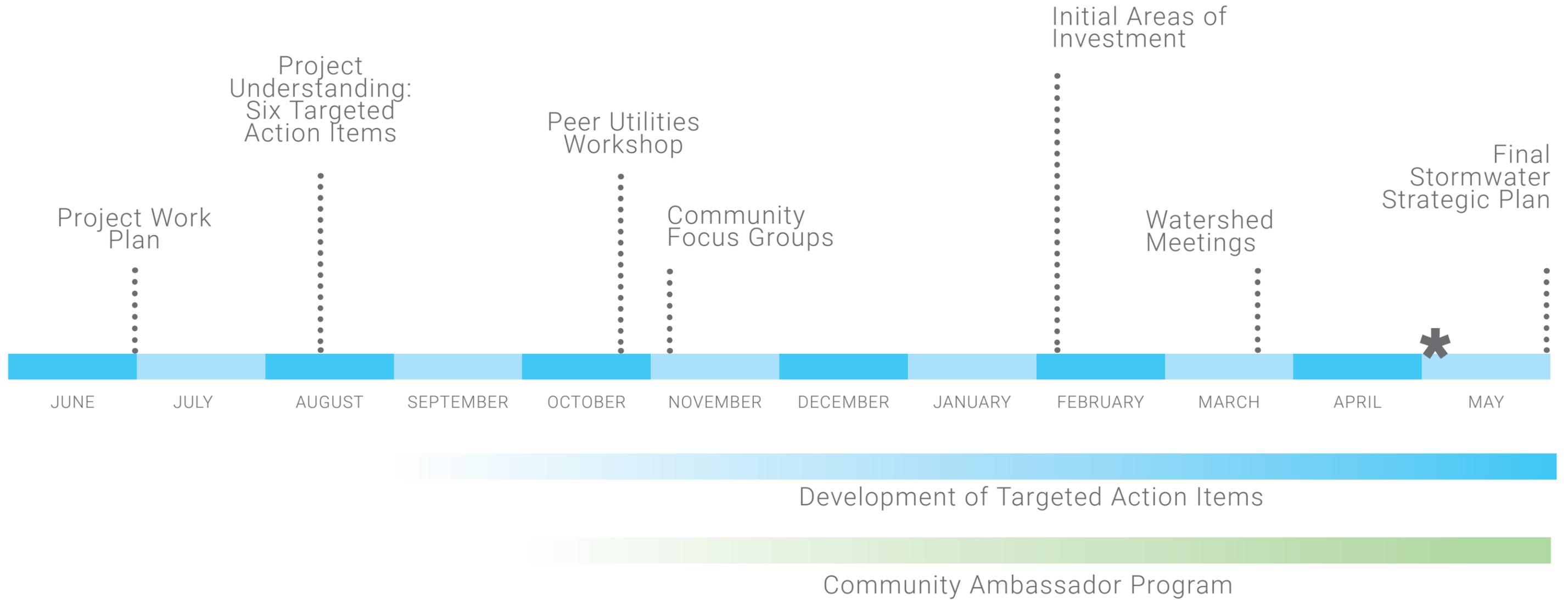
local climate change modeling and resilience planning

Why This Plan Now?



- Green First focused only on green infrastructure planning to improve water quality because the county's stormwater plan (still in development at the time) was going to concentrate on "gray" infrastructure upgrades--on pipes and tunnels.
- The county water authority (called ALCOSAN) has now finalized a plan for the construction of tunnels which will significantly reduce sewage overflow into the rivers when it rains. The plan will be implemented over the next ten years.
- This means the Pittsburgh Water and Sewer Authority (PWSA) can expand its focus to include residents' and businesses' concerns about flooding and basement backups, and consider equity and environmental justice in setting priorities for water investment.

PROJECT TIMELINE



TOP SIX PRIORITY ACTIONS

1

Analyze Priority Areas of Investment

2

Define Initial Investment Strategy & Illustrate It In a Few Places

3

Leverage Stormwater Fee Impact

4

Establish Guiding Principles to Level of Service & Flooding

5

Develop a Communication Framework to Increase Transparency

6

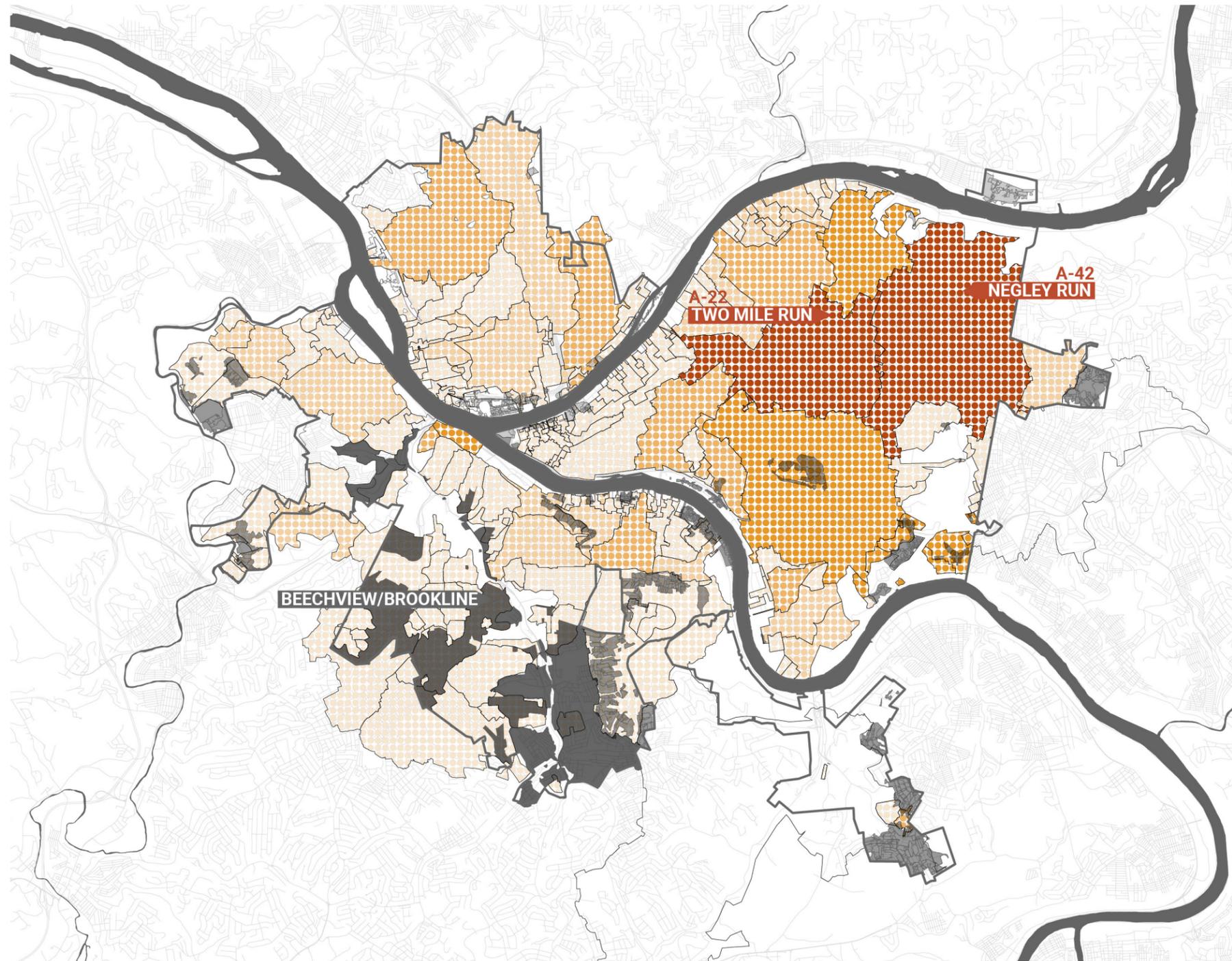
Develop a Framework for a Joint Task Force on Stormwater

1 Analyze Priority Areas for Investment

We will map many kinds of data to identify areas in the city where investment could have a major impact on local flooding and create community benefits.

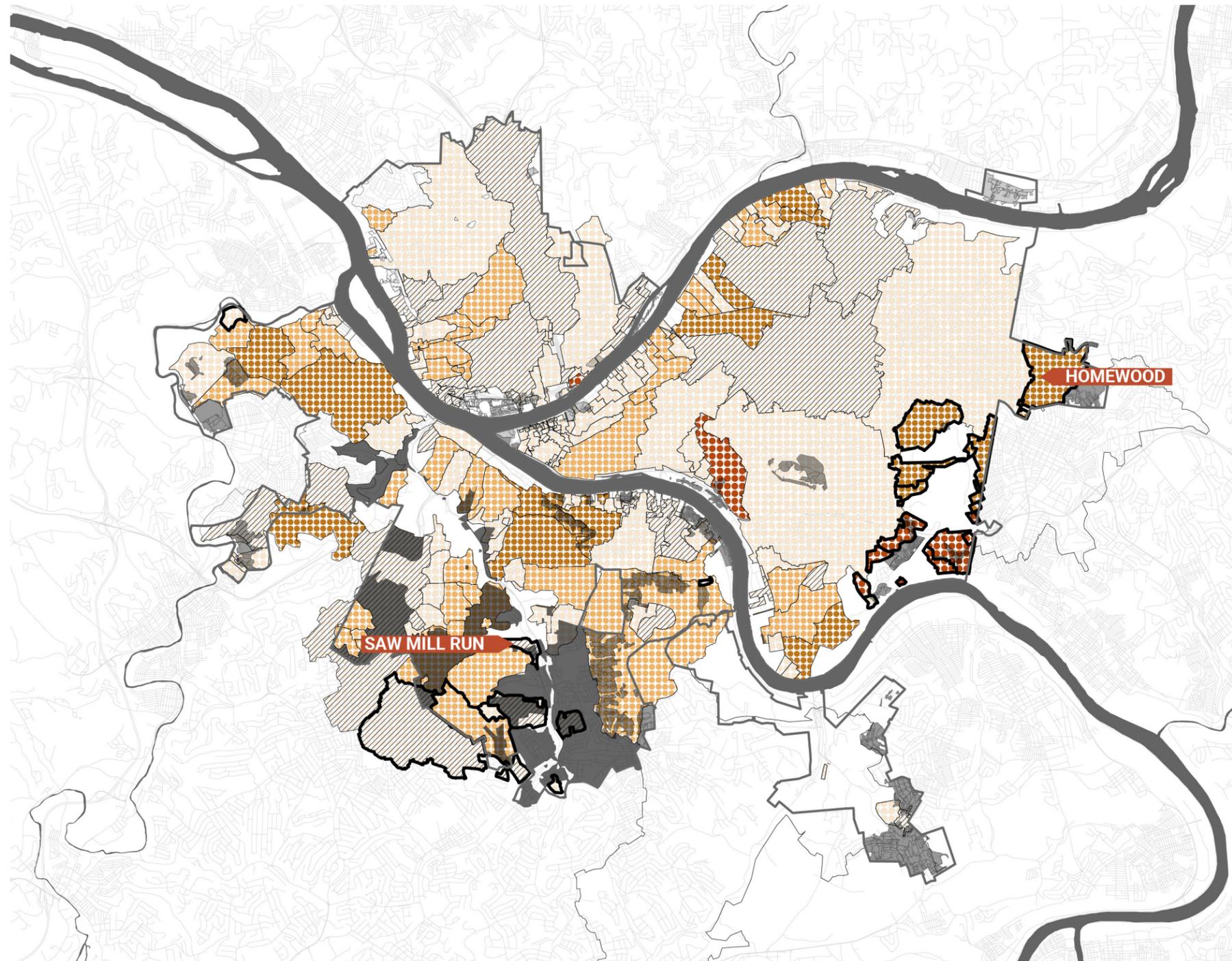
- Prioritize more kinds of water management, not only water quality and sewer overflows
- Map local flooding impacts, basement backups, and environmental justice areas for water investment
- Study geographic priorities with input from PWSA and other stakeholders
- Review good work being done in other cities to prioritize investment to create more kinds of benefit

Water Quality: Current CSO Volumes

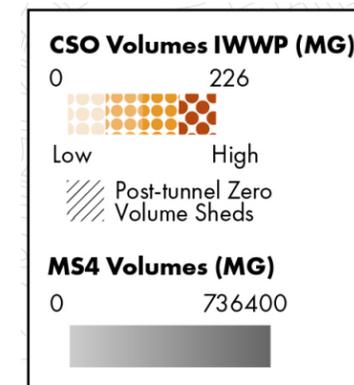


- Ongoing conversations with PWSA have provided updated information on CSO volumes
- Highest volumes are in Negley Run and Two Mile Run
- MS4 outfalls are shown to illustrate opportunities for intervention to meet MS4 compliance

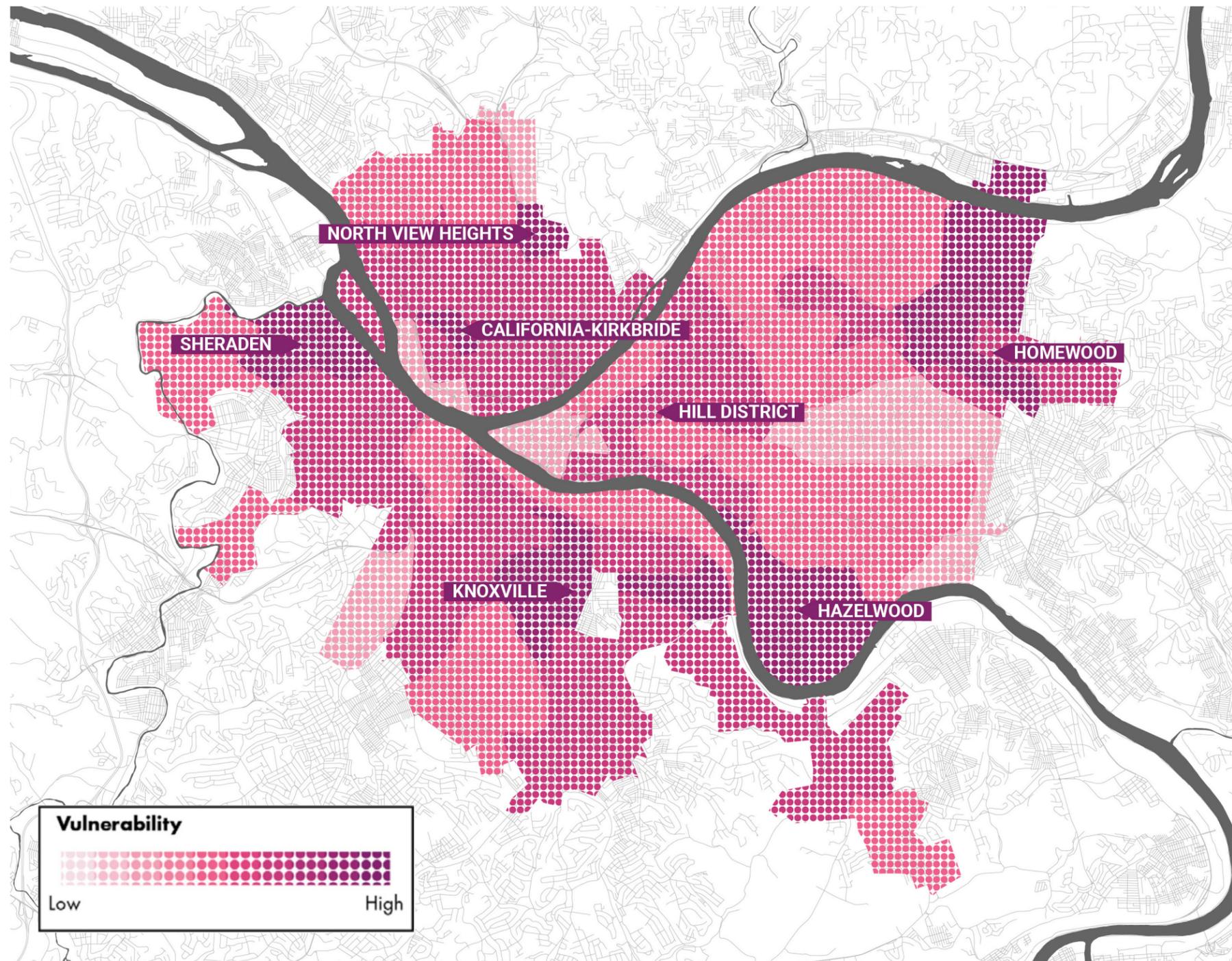
Water Quality: Post ALCOSAN Tunnel CSO Volumes



- Ongoing conversations with PWSA have provided updated information on outfall volume that will remain fully PWSA's responsibility. Those are highlighted here. Others are ongoing negotiation with ALCOSAN.
- The highest volume areas are found in Homewood/East Hills, Point Breeze/Regent Square/Squirrel Hill, and Beechview/Brookline in Saw Mill Run
- While volumes will be significantly reduced post-tunnel, there remain many opportunities for reduction in the near term



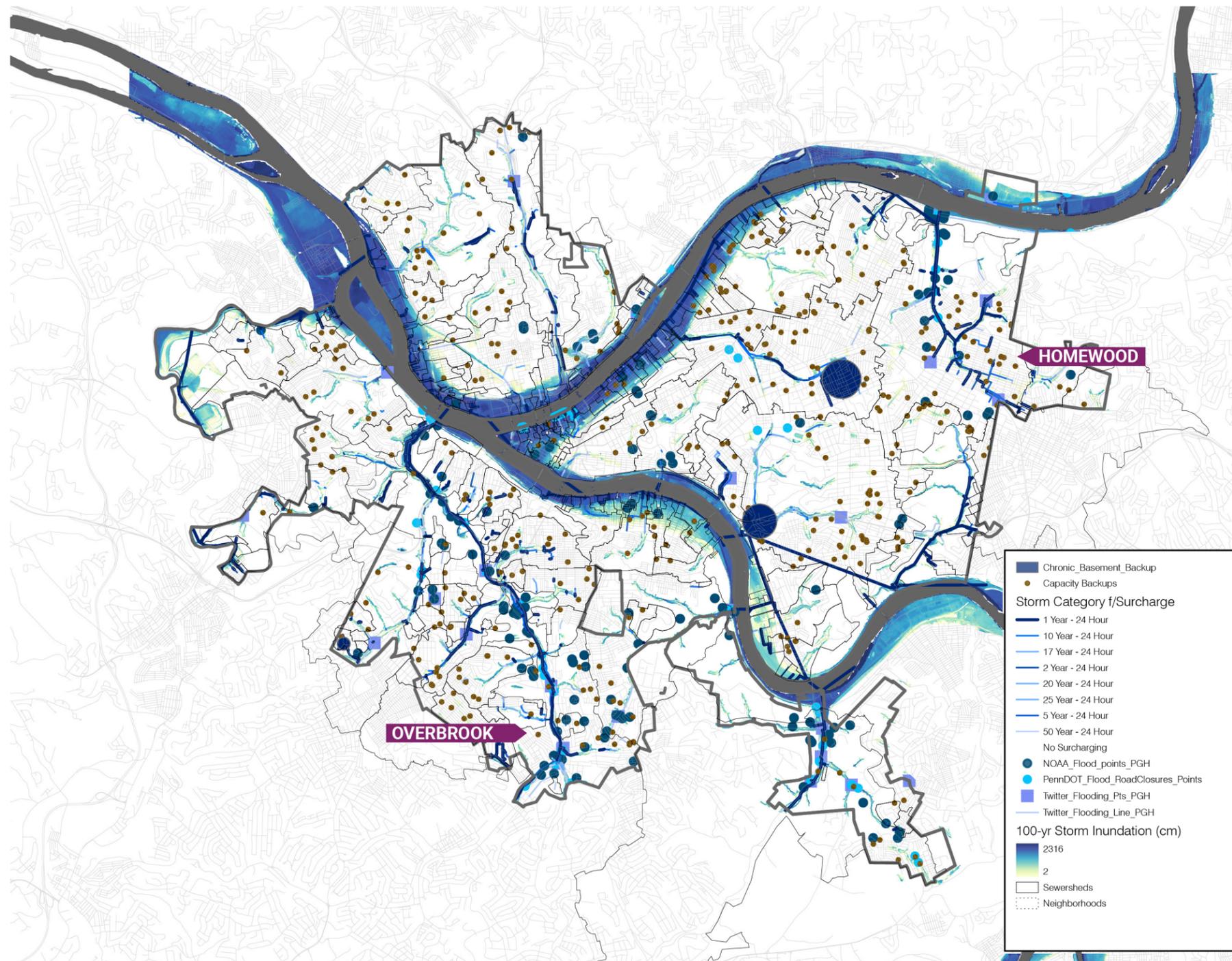
Environmental Justice: Allegheny County



- Updated to include Allegheny County Environmental Justice Index which includes:
 - Median Household Income
 - Diesel Particulate Matter
 - Particulate Matter $\leq 2.5 \mu\text{m}$
 - Percent Minority
 - Proximity to Green Space
 - Educational Attainment
 - Miles of Railroad Track Coverage
 - Housing Vacancy

Source: Allegheny County Health Department, 2018.

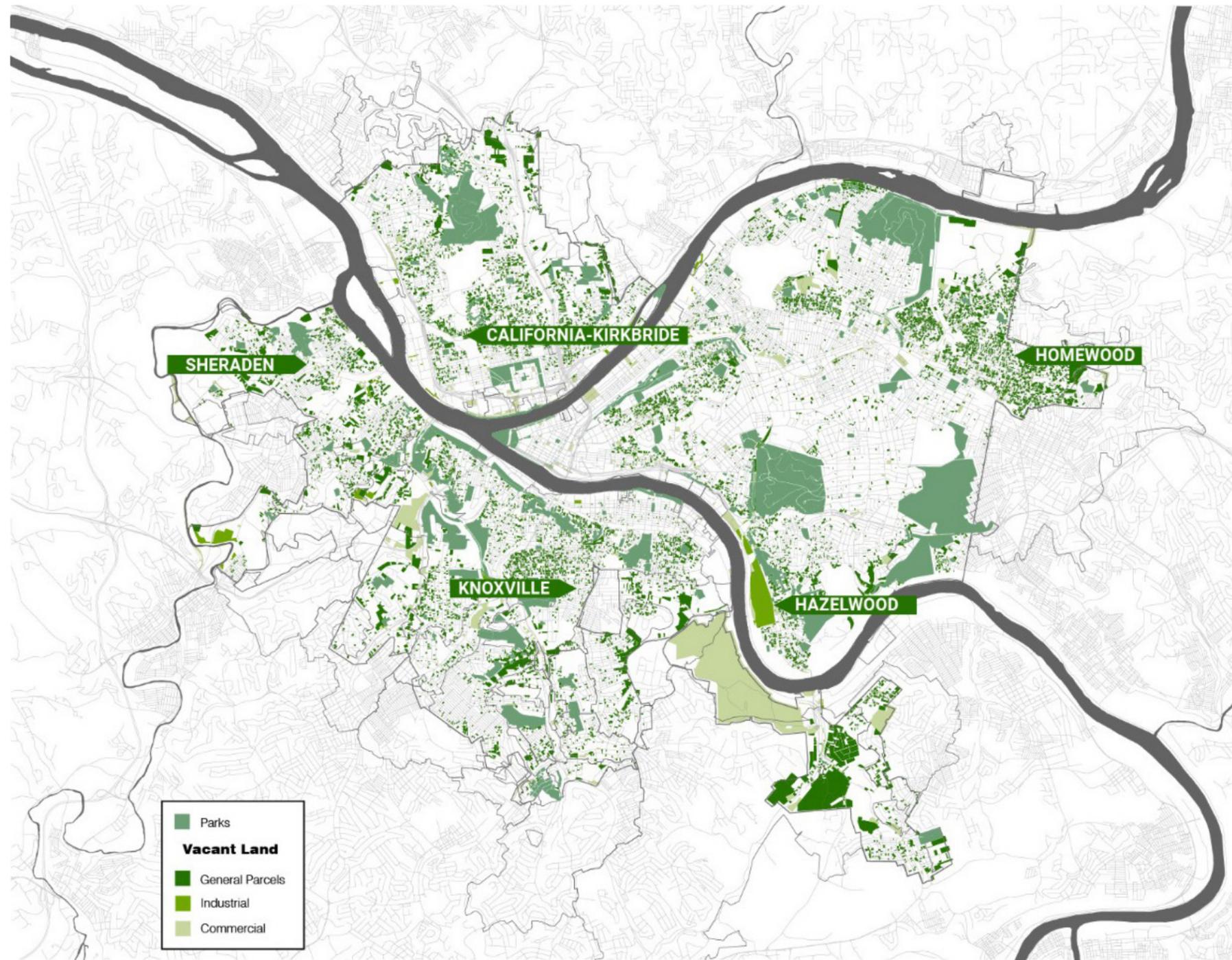
Local Flooding



- Flooding data updated to include First Street Foundation Flood Factor inundation forecast for 1-in-100 year storm event in 2100 climate conditions.
- PWSA investigated and confirmed capacity-related basement backup locations between 2020 and 2021.
- Other data includes:
 - PennDOT Road Closures
 - NOAA Storm Events Flood and Flash Floods
 - Allegheny County Twitter Feed

Source: First Street Foundation National Flood Risk Assessment, 2020.

Green Infrastructure Opportunity

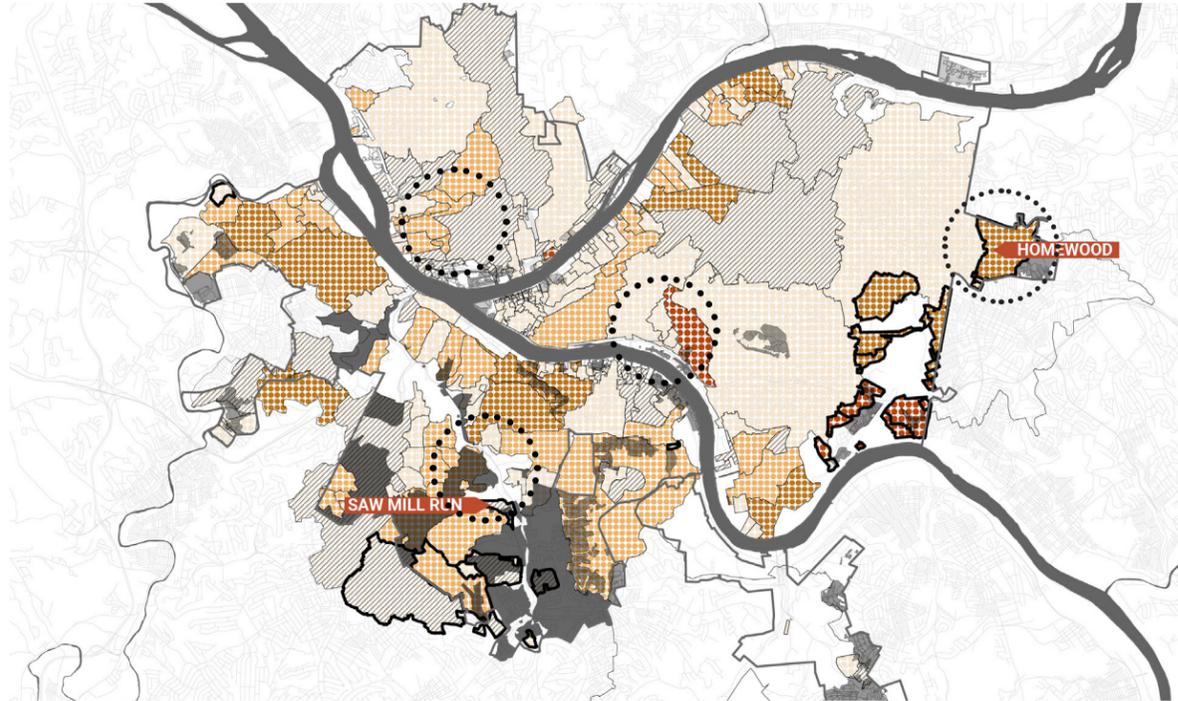


- Opportunities include known Parks + Greenways as of October 2021
- Vacant Parcels (general, industrial, commercial) added as opportunity areas since focus groups
- As of December 2021, six new parks to be transferred from Greenways for Pittsburgh Program to city ownership including: Bigelow, Fairhaven, Hazelwood, Knoxville Incline, Moore and Seldom Seen.

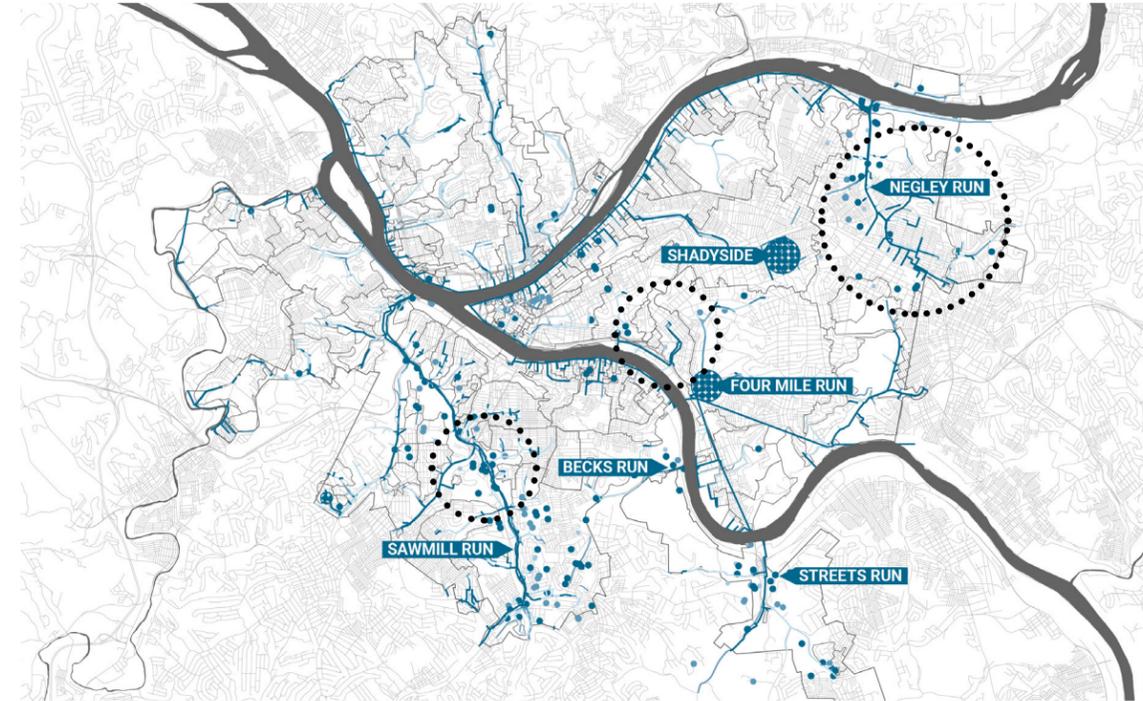
Source: Parcel Scale Cost Effectiveness and Siting Analysis - Micheal Blackhurst, University of Pittsburgh, and ALCOSAN Controlling the Source

Four Lenses

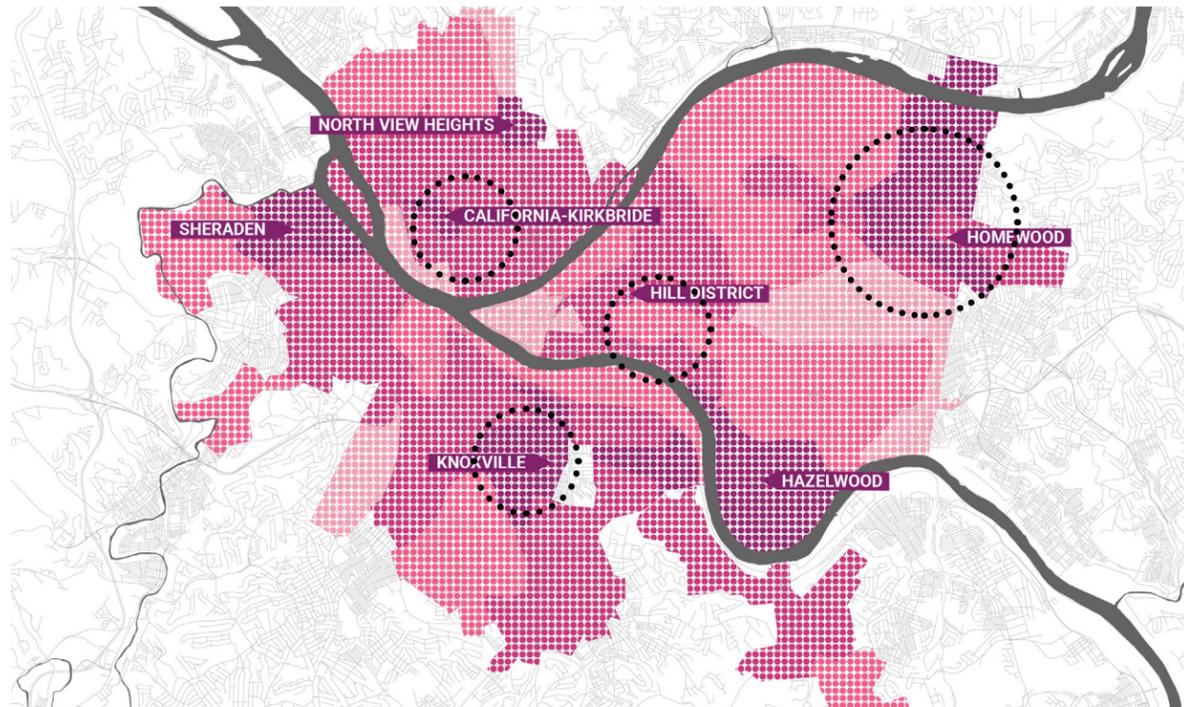
Water Quality



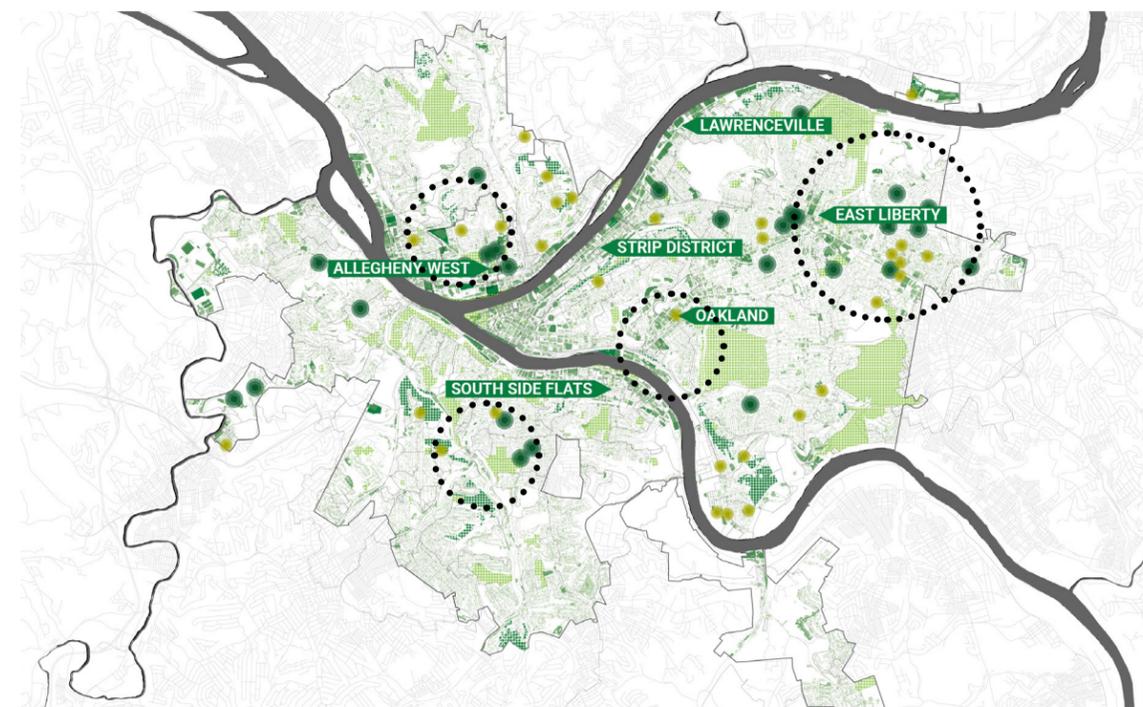
Localized Flooding



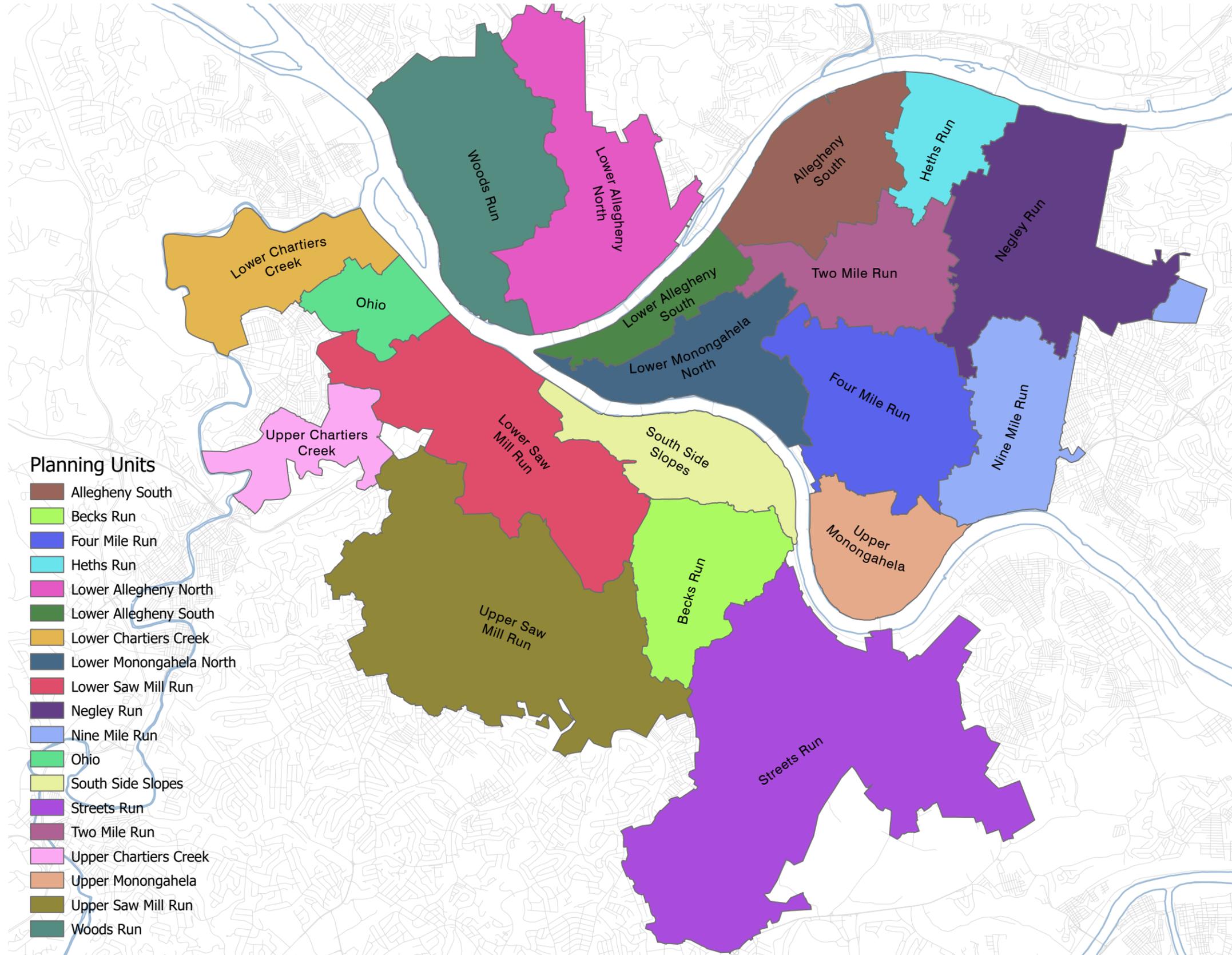
Socio-Economic & Environmental Justice



Areas of Opportunity

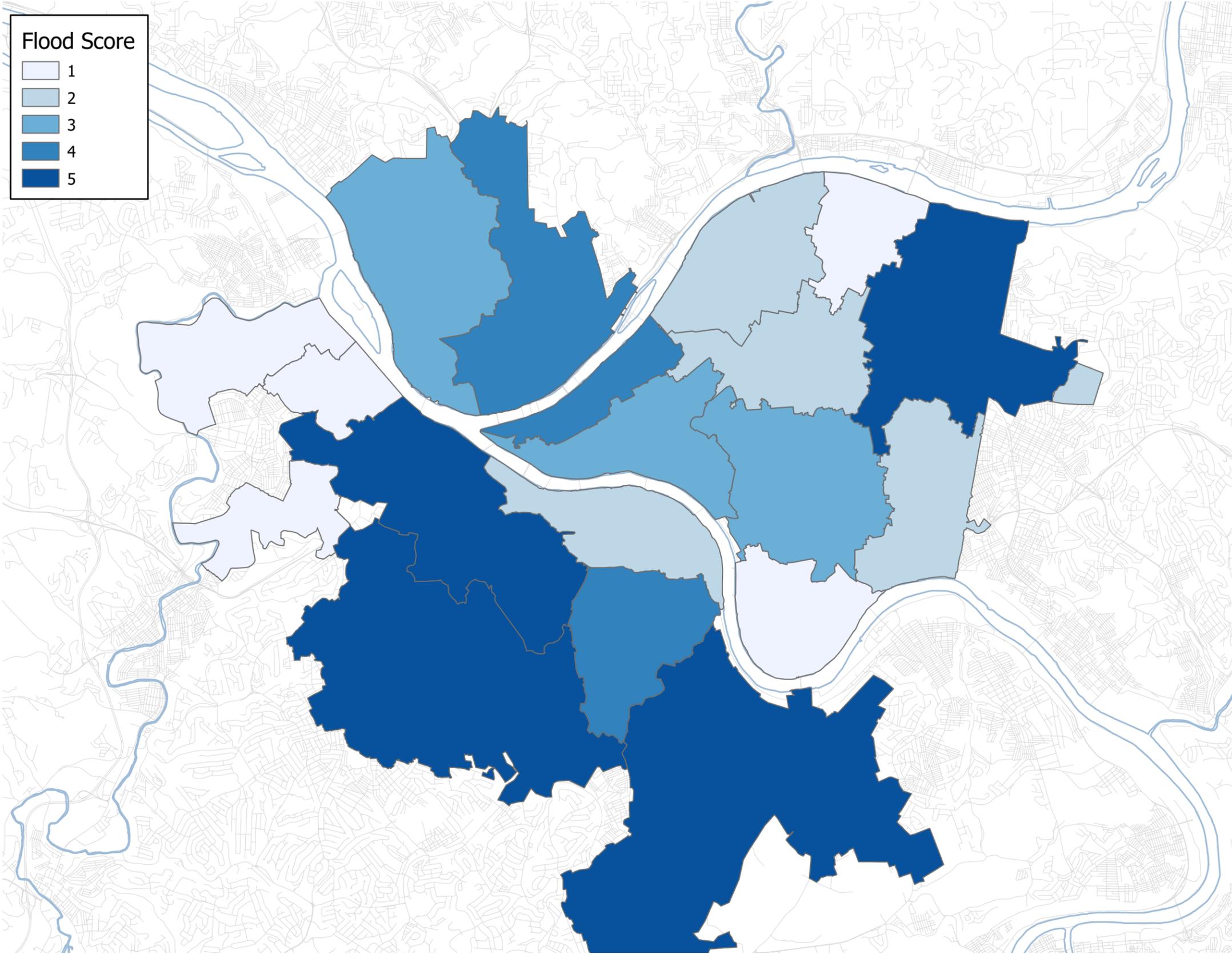


Proposed Planning Units



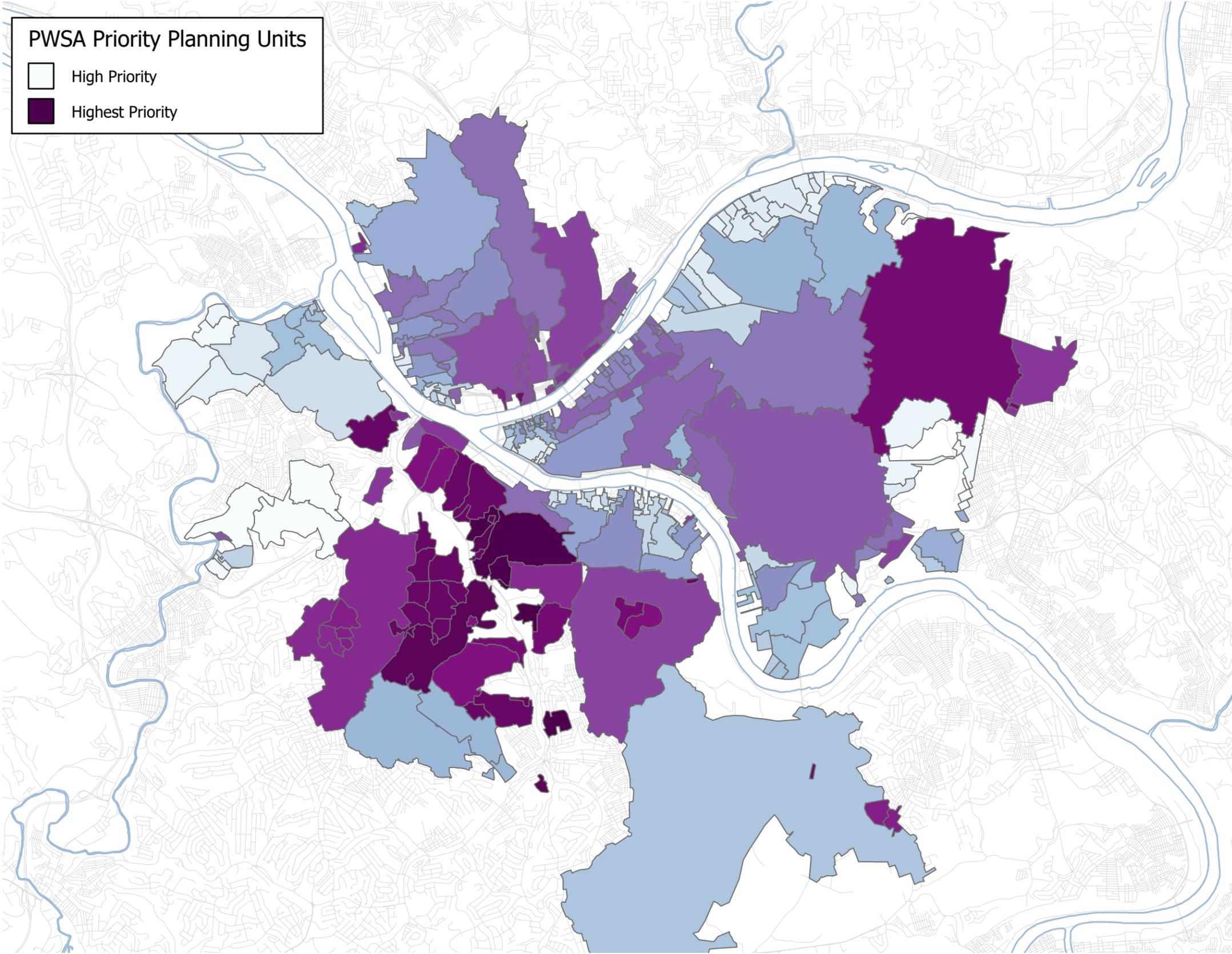
- Breaks the area into manageable units of similar size, based on historic watersheds, etc.

Flooding Data Composite



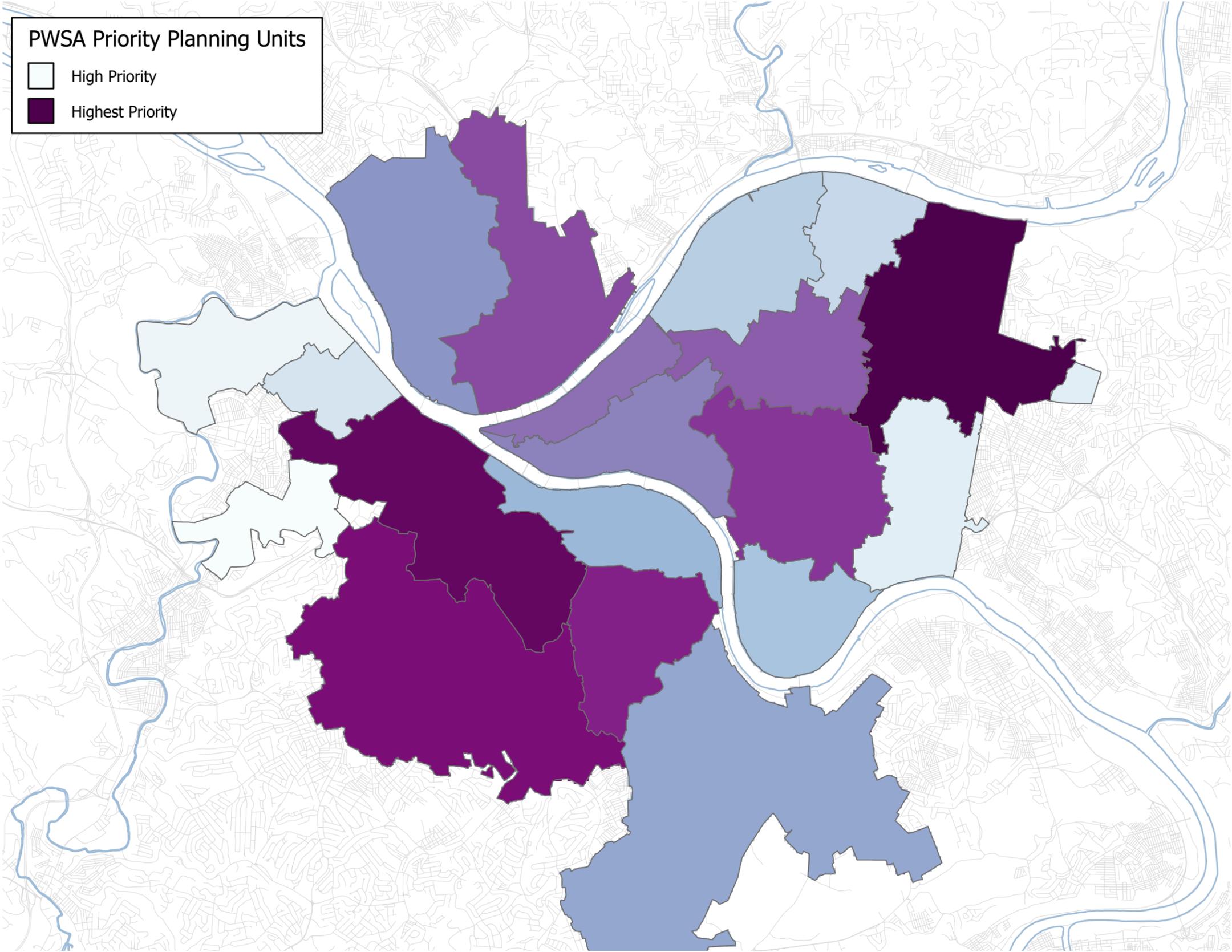
- Consolidates all the sources of flooding data

Priority Sewersheds for Water Quality



- Based on CSO volumes, PWSA Responsibility, expected tunnel timing, and MS-4 obligations

Proposed Priority Planning Units



- Overlays Flooding, Water Quality, and Environmental Justice mapping

Within each of these units, there will be localized, acute issues that will need to be addressed- no one is a "low priority."

How can we communicate this?

How do we keep community members engaged, knowing there is a long time frame to make projects become reality?