

Pittsburgh

MARYLAND AVENUE GREEN STORMWATER INFRASTRUCTURE **PROJECT – PHASE 1 Community Meeting**

April 30, 2019

TONIGHT'S PROGRAM

Sign In

• Please write your name, address, preferred phone number, and email on the sign in sheet.

Project Presentation

• We have included post-its on each table for any questions you may have throughout the presentation.

Questions and Answers

 This is an opportunity to ask questions after the presentation or individually with members of the PWSA team.

Exit Survey



Maryland Avenue GSI Project Background A-22 Sewershed Overview

Typical Year (TY) Overflow volume, existing conditions

Approximately 580 MG, 3rd largest CSO in PWSA system (63% capture)

Targeted amount of TY GSI flow removal volume

Approximately 153 MG

Targeted amount of impervious tributary area controlled

Approximately 270 acres total, 11MG GI storage volume



Maryland Avenue GSI Project Background Recent Neighborhood Activities – August 31, 2014 to present

August 31, 2014 – Extensive flooding due to 1" rain in 15 minutes

Resulted in large number of basement complaints along Maryland Ave and adjoining streets

October 2014 – 14 basement inspections and CCTV

Maryland Ave, S Negley Ave, Maryland Ave, Walnut St.

January 2015 – Homeowner Letters and Survey

PWSA sent over 1,800 letters to gather information from residents. Survey included questions on home structure, age of home, location of sanitary lateral, occurrence of

THE PITISBURGH WATER A SEWER AUTHOR Quality Water Quality Servi	Shadyside Basement Flooding Investigation
8. Have you ever had se	vage in vour basement?
() Yes	
○ No	
9. Have you reported all *If not, please notify PW sewer problems.	basement flooding occurrences to PWSA? SA of any future occurrences (412-255-2423). This helps PWSA identify areas that may have
⊖ Yes	
No	
11. How often do they or	cur?
12. Source of water (i.e.	windows, walls, floor drain, etc.)?
	N
	TIGY NOAL

Maryland Avenue GSI Project Background Recent Neighborhood Activities – August 31, 2014 to present

November 2015 – A-22 Flooding Eval and GSI Assessment Draft Report

Evaluates strategies to address basement backups and CSO reduction, and identifies that local backflow prevention or rerouting of flows are **not** viable options to address flood protection issues. Targets solving system capacity needs through source reduction.

March 2016 – 1st A-22 demonstration projects funded for design

Hillcrest and Melwood GSI projects now in construction phase

December 2016 – PWSA Green First Plan shared for public comment



2011 Shadyside Flooding

Maryland Avenue GSI Project Background Design Community Meeting #1 – July 27, 2017

Project Goal #1

Maximize stormwater capture across the four projects areas, with a target of 6.5 to 13 acres cost effectively managed.



Maryland Avenue GSI Project Background Design Community Meeting #1 – July 27, 2017

Project Goal #1

Maximize stormwater capture across the four projects areas, with a target of 6.5 to 13 acres cost effectively managed.

Project Goal #2

Use GSI technologies that will reliably manage intense rainfall, defined as 1.0" in 15 minutes, to positively impact flooding conditions at key sewer locations.



Kentucky Ave. - Existing



Kentucky Ave. - Pedestrian Greenway Rendering



Salem Way - Existing



Salem Way - Green Alley Rendering



Maryland Avenue GSI Project Background Design Community Meeting #1 – July 27, 2017

Project Goal #1

Maximize stormwater capture across the four projects areas, with a target of 6.5 to 13 acres cost effectively managed.

Project Goal #2

Use GSI technologies that will reliably manage intense rainfall, defined as 1.0" in 15 minutes, to positively impact flooding conditions at key sewer locations.

Project Goal #3

Engage residents on stormwater improvements that can be made on private property.



Maryland Ave. GI Community Meeting – July 27, 2017



Project Goal #1 - Update

Maximize stormwater capture across the four projects areas, with a target of 6.5 to 13 acres cost effectively managed.

Potential Impervious Acres Managed

by Project Area



Project Goal #1 - Update

Maximize stormwater capture across the four projects areas, with a target of 6.5 to 13 acres cost effectively managed.

Potential Annual Overflow Reduced

by Project Area [Million Gallons per Typical Year]



Project Goal #1 - Update

Maximize stormwater capture across the four projects areas, with a target of 6.5 to 13 acres cost effectively managed.

Project Goal #2 - Update

Use GSI technologies that will reliably manage intense rainfall, defined as 1.0" in 15 minutes, to positively impact flooding conditions at key sewer locations.



Intersection of Maryland and Holden

PGHOO

11.4 feet deep

manhole

Project Goal #1 - Update

Maximize stormwater capture across the four projects areas, with a target of 6.5 to 13 acres cost effectively managed.

Project Goal #2 - Update

Use GSI technologies that will reliably manage intense rainfall, defined as 1.0" in 15 minutes, to positively impact flooding conditions at key sewer locations.

Project Goal #1 - Update

Maximize stormwater capture across the four projects areas, with a target of 6.5 to 13 acres cost effectively managed.

Project Goal #2 - Update

Use GSI technologies that will reliably manage intense rainfall, defined as 1.0" in 15 minutes, to positively impact flooding conditions at key sewer locations.

Project Goal #1 - Update

Maximize stormwater capture across the four projects areas, with a target of 6.5 to 13 acres cost effectively managed.

Project Goal #2 - Update

Use GSI technologies that will reliably manage intense rainfall, defined as 1.0" in 15 minutes, to positively impact flooding conditions at key sewer locations.

PGHAO

Project Goal #1 - Update

Maximize stormwater capture across the four projects areas, with a target of 6.5 to 13 acres cost effectively managed.

Project Goal #2 - Update

Use GSI technologies that will reliably manage intense rainfall, defined as 1.0" in 15 minutes, to positively impact flooding conditions at key sewer locations.

PGHAO

Project Goal #1 - Update

Maximize stormwater capture across the four projects areas, with a target of 6.5 to 13 acres cost effectively managed.

Project Goal #2 - Update

Use GSI technologies that will reliably manage intense rainfall, defined as 1.0" in 15 minutes, to positively impact flooding conditions at key sewer locations.

Project Goal #3 - Update

Engage residents on stormwater improvements that can be made on private property.

Potential Impervious Acres Managed

by Project Area, Building Footprint Opportunity

Four Distinct Project Areas

Holden, Walnut, Kentucky East & Kentucky West.

Proposed Improvements

Under street storage, Green alleys, Green intersections and Pedestrian greenways.

Community Concerns

Address flooding problems, No elimination of existing parking, Site distances at intersections, Improving the aesthetic of neighborhood.

Maryland Avenue GSI Project Phase I

Phase I

Howe Street between College Ave and S. Negley, Kentucky Ave between College Ave and S. Negley and portion of Maryland Ave.

Why Selected?

Area contributes to existing sewer that surcharges during heavy storms.

This portion contains all proposed project elements, making for a unique demonstration project.

Relatively small footprint so can be constructed quickly.

Initial Plan – Spring 2018 Community Meeting #4

Value Engineering Study

- GOALS
 - Capture and detain 1.5 inches of runoff from a minimum of 5.6 acres of impervious surface (pavements and rooftops)
 - Minimize inconveniences to residents (no parking losses)
 - Minimize conflicts with utilities
 - Minimize maintenance needs
- OUTCOMES:
 - Replicable strategy to be repeated throughout Pittsburgh
 - Introduce new green features to the streetscape
 - Meet costing goals: \$250k per impervious acre managed

Intersection Capture Plan

Green Street with porous pavers^{erred Alternative} and augmented storage

Preferred Alternative

Green Sidewalk - with planted porous trench for homeowner downspout reconnection

TYPICAL GREEN SIDEWALK

Ex Paving

SECTION

RIGHT OF-WAN

hard connection from new stormwater lateral

overland connection

Permeable Pavements

Opportunities

- Reduction in Nuisance Flooding
- Cost Sharing with other Agencies for Critical Path Projects

PGHAO

- Transferability of the Techniques
- Scalable
- Meeting ALCOSAN Consent Order Obligations
- Community Reforestation
- Intersection Beautification
- Branding Opportunities

Example

Roof Area = 2,882 Ft²

With a 6" lateral at 0.5° slope, the pipe can handle 0.343 Ft³/sec

At that rate, any more than 1.29 inches of rain in a 15 minute period would back up the pipe

With enough rain, a connected home will back itself up.

City does not permit a home's downspouts to be discharged to sidewalks or streets.

Under this pilot project, PWSA will provide a location to direct a disconnected downspout.

A shallow trench drain will be installed adjacent to the sidewalk

Tees will be provided for future connections of downspouts, capped at the property line

DDS connects to new storm water system, easing the burden on the home lateral during heavy rains.

Property owners have option to assist PWSA in extending the reach of this project.

Connection can also serve as drain for private GI such as:

- Rain Barrels
- Stormwater Planters
- Rain Gardens
- Bioswales

Maryland Avenue GSI Project Upcoming Neighborhood Activities – Phase I Schedule

Maryland Ave GI Project Phase I

Next Steps

- Please complete Exit Survey
- Integrate Community and Stakeholder Feedback
- Finalize GSI and Restoration for 100% Design
- Initiate bid phase of Phase I
- Community Meeting #5 Phase I Preconstruction in June/July 2019
- This presentation will be available on the internet: www.pgh2o.com

PGHAO

• Thank You!

Ryan H. Quinn, PE Associate Project Manager 412.255.8800 x 2421 or rquinn@pgh2o.com

Pittsburgh

Ryan H. Quinn, P.E. Associate Project Manager 412.255.8800 x 2421 or rquinn@pgh2o.com