



Pittsburgh
Water & Sewer
Authority

Four Mile Run Stormwater Improvement Project

15 September 2020 Project Update

Welcome and Introductions



Alex Sciulli, P.E.
Chief of Program Management

Jim Turner, P.E.
Project Manager

Tony Igwe, P.E.
Wade Trim – Project Manager

Kari Mackenbach, CFM, ENV SP
ms consultants – Hydraulic modeling

Mallory Griffin, P.E.
JMT – Stormwater Pipeline Design

Tim Nuttle, PhD
CEC – Panther Hollow Lake and Junction Hollow Design

Pat Sullivan, P.E.
CEC – Panther Hollow Lake and Junction Hollow Design



Today's Agenda

6:30pm – 8:00pm

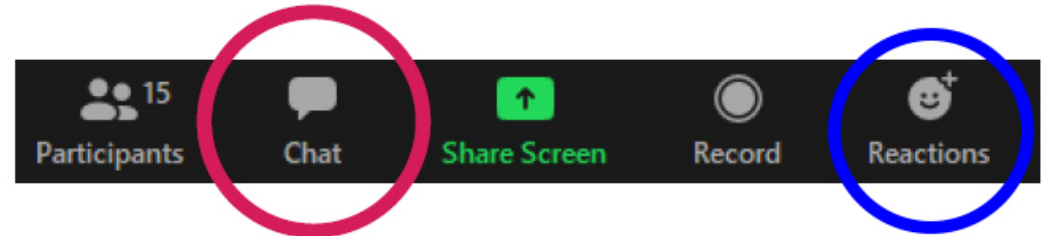
- 1: PWSA's Mission and this Project's Goals**
- 2: Four Mile Run Stormwater Improvements**
- 3: Enhanced Modeling and Flood Mitigation Benefits**
- 4: Four Mile Run Connection to Monongahela River**
- 5: Project Schedule and Costs**
- 6: Questions and Answers**



Submitting Questions Using Zoom

During Presentation

- Participants will be muted
- To ask a question use the chat box below
- We will pause between sections to answer clarifying questions about information presented on slides



Click the Chat Icon

- Located bottom of screen
- Looks like cartoon bubble
- Type question in dialogue box; press enter to send
- All attendees will receive your question
- Raise hand if need to interject

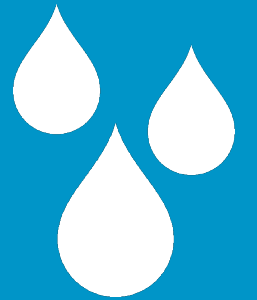
When presentation ends

- We will respond to questions individually
- We will unmute microphones to enable verbal Q&A

For more information or to ask a question after the meeting, please visit www.pgh2o.com/4mr

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PWSA Mission and this
Project's Goals



PWSA's Mission

ORIGINAL MISSION:

- **PWSA's mission was originally limited to providing drinking water to Pittsburgh's homes and businesses, and to providing conveyance of wastewater through the sewer system to ALCOSAN's treatment facilities.**

TODAY:

- **Successful stormwater management requires participation from government, residents, businesses, and non-profits.**
- **As the problem has grown in scale and in intensity, PWSA identified a need and has taken the initiative to address the impacts of stormwater.**
- **PWSA's 2016 Green First Plan identified projects and programs, including the Four Mile Run project, that can have a positive impact.**



“Creating healthy, flood-prepared neighborhoods”



PROJECT GOALS AND BENEFITS:

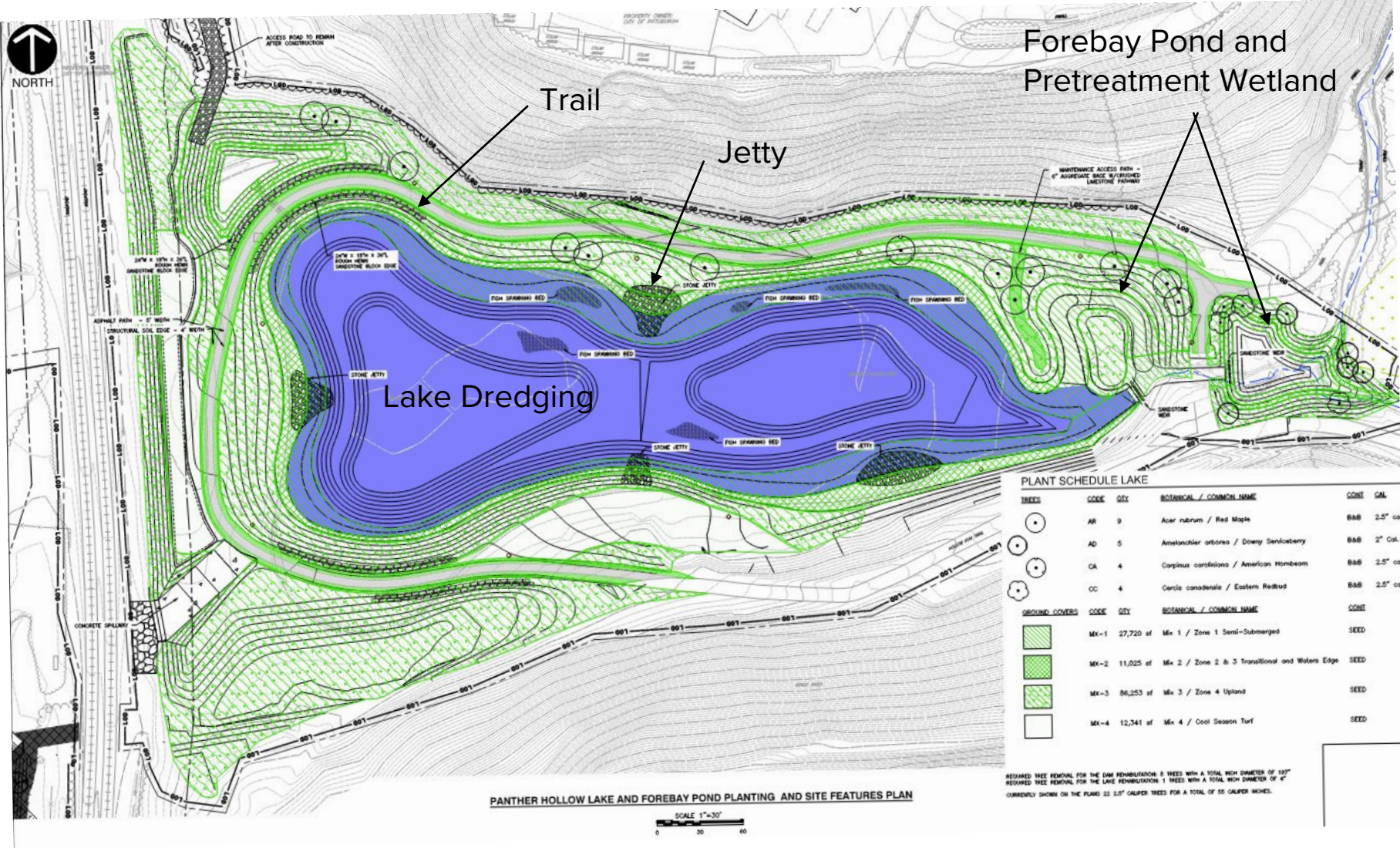
- 1. Reduce Combined Sewer Overflows**
- 2. Reduce Flood Risk and Basement Backups**
- 3. Manage Sediment**
- 4. Leverage Resources for Regional Benefit**

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Four Mile Run Stormwater
Improvements

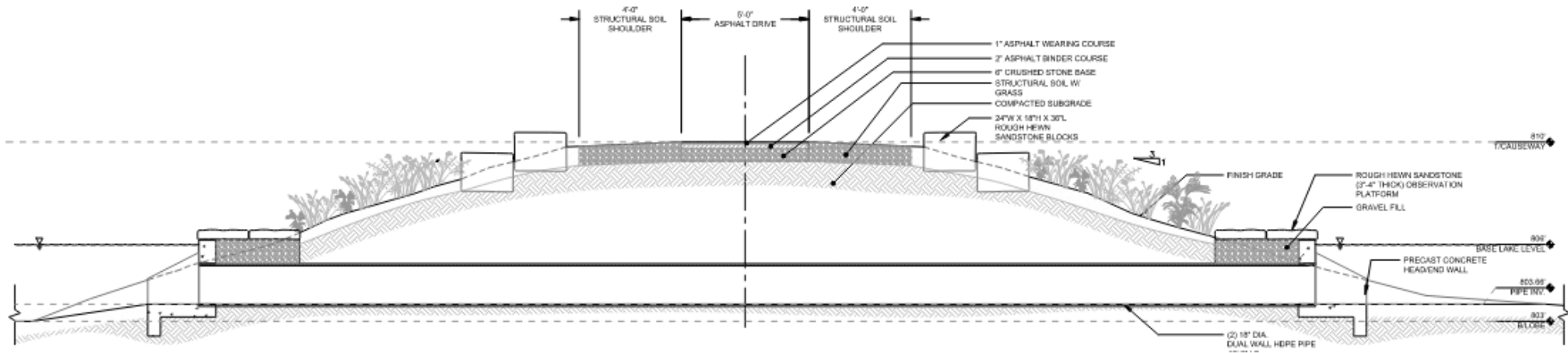


Panther Hollow Lake – Plan of Features

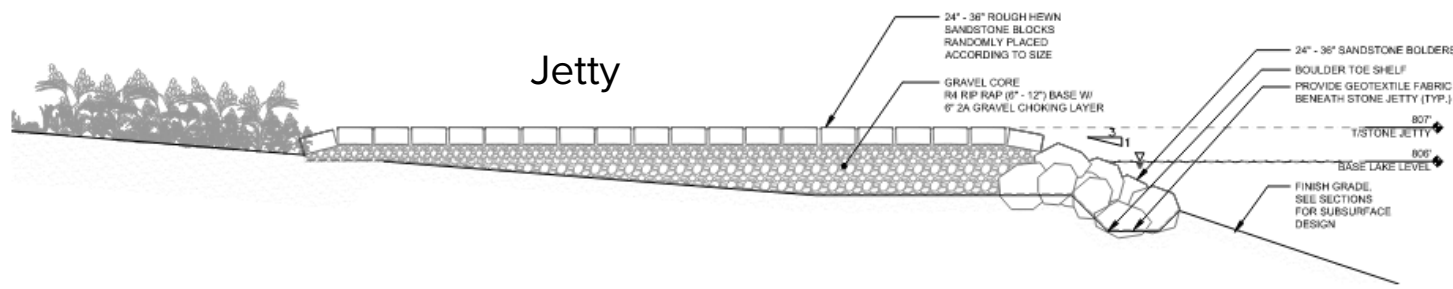


Panther Hollow Lake – Embankment Trail

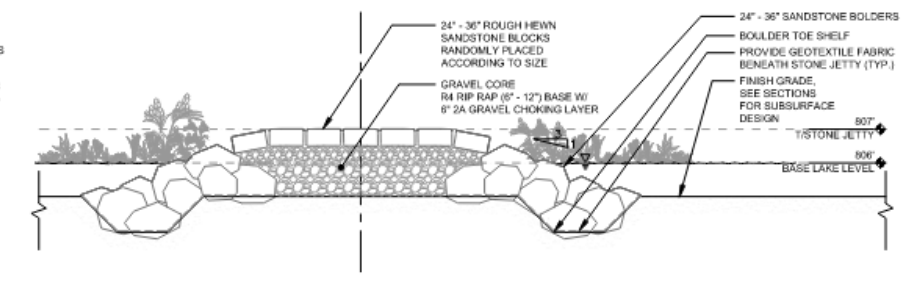
13 ft. Wide Trail



DETAIL SECTION THROUGH CAUSEWAY
SCALE: 1" = 2'

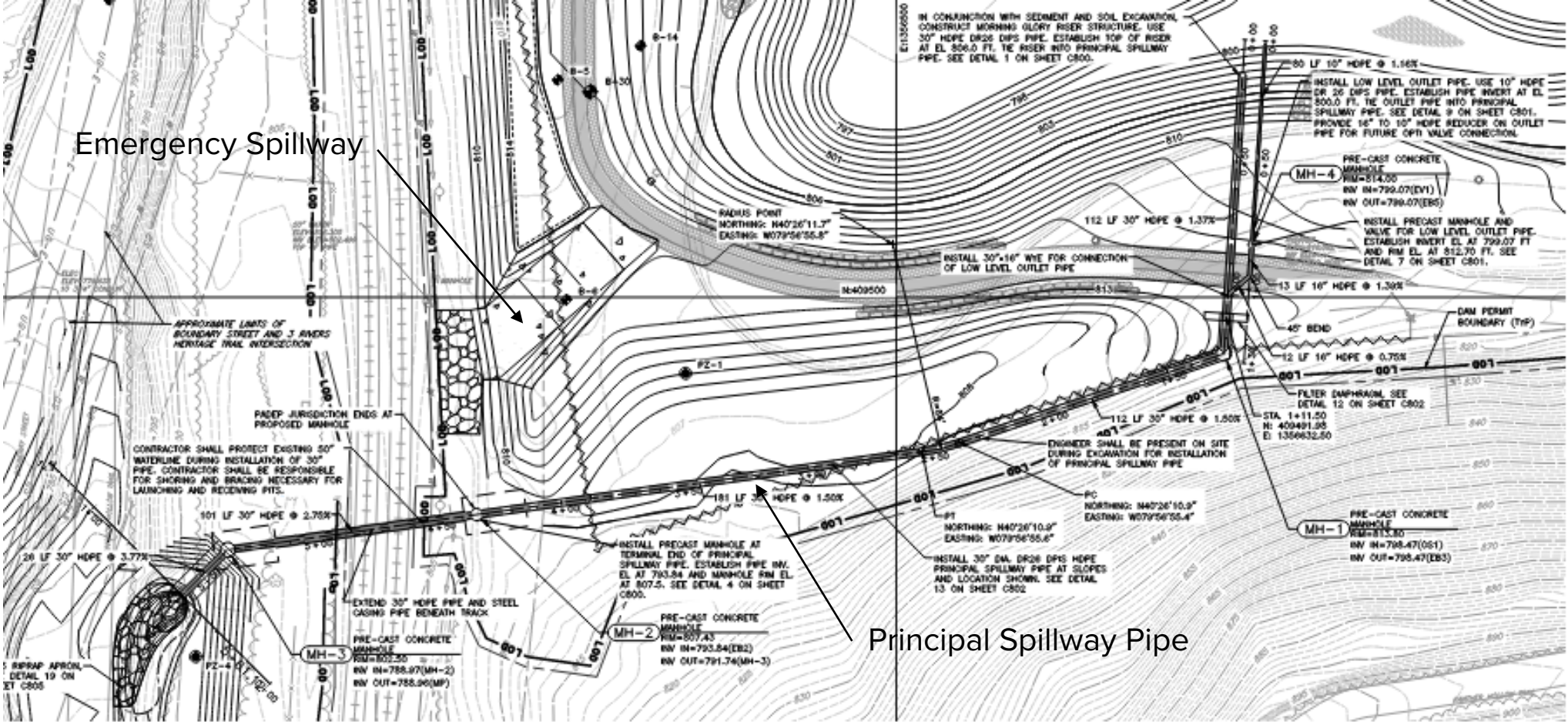


TYPICAL STONE JETTY – LONGITUDINAL SECTION
SCALE: 1" = 2'



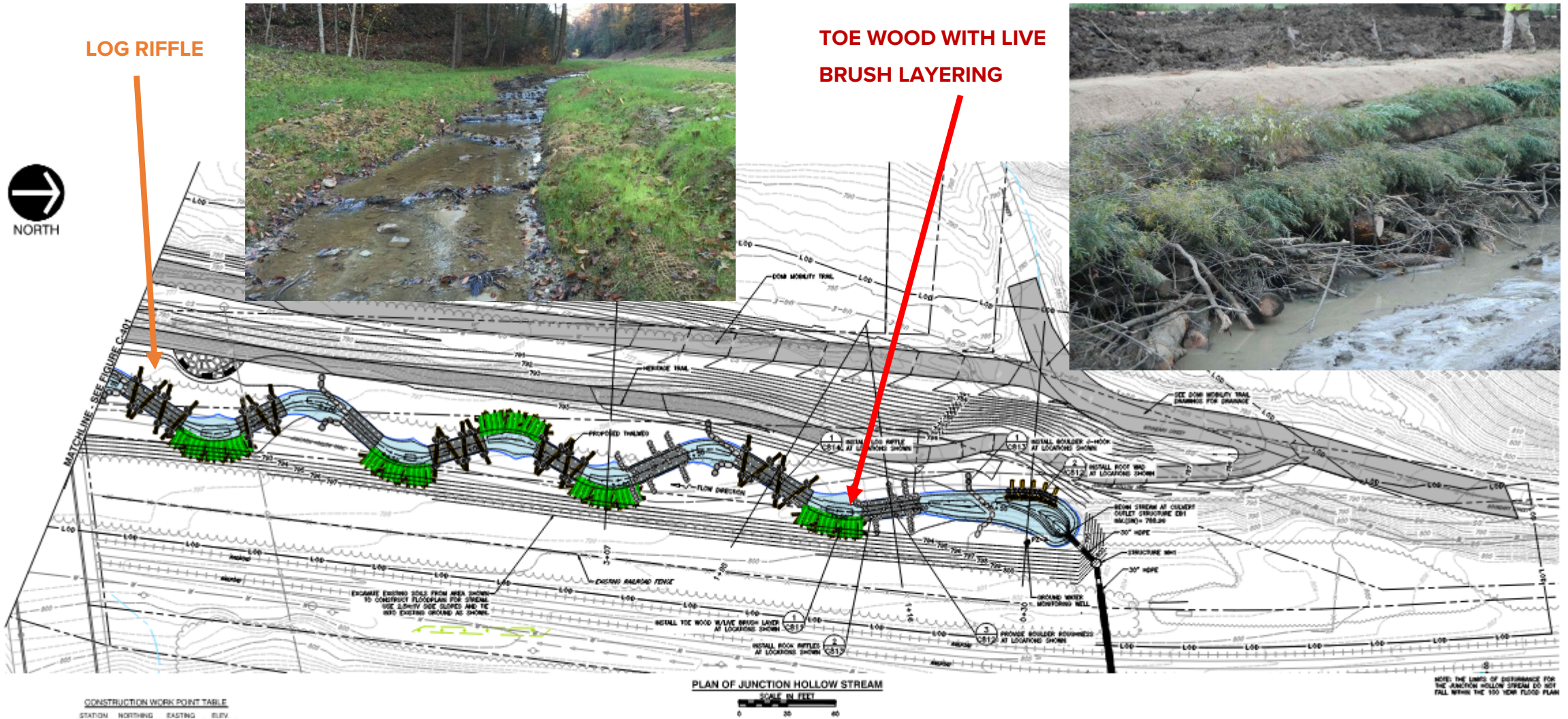
TYPICAL STONE JETTY – CROSS SECTION
SCALE: 1" = 2'

Panther Hollow Lake – Storm Control

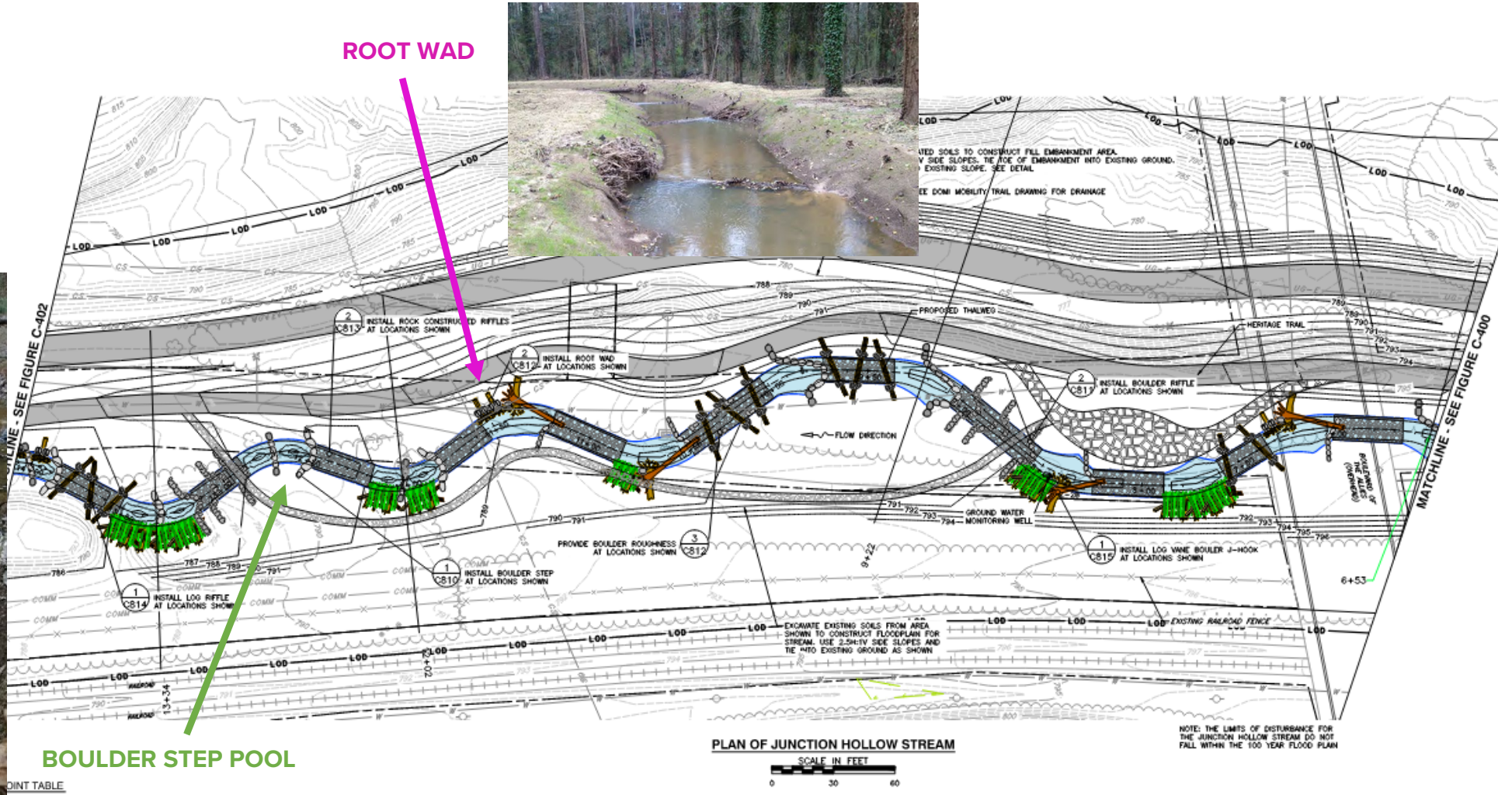


PRINCIPAL SPILLWAY PLAN
SCALE IN FEET
0 30 60

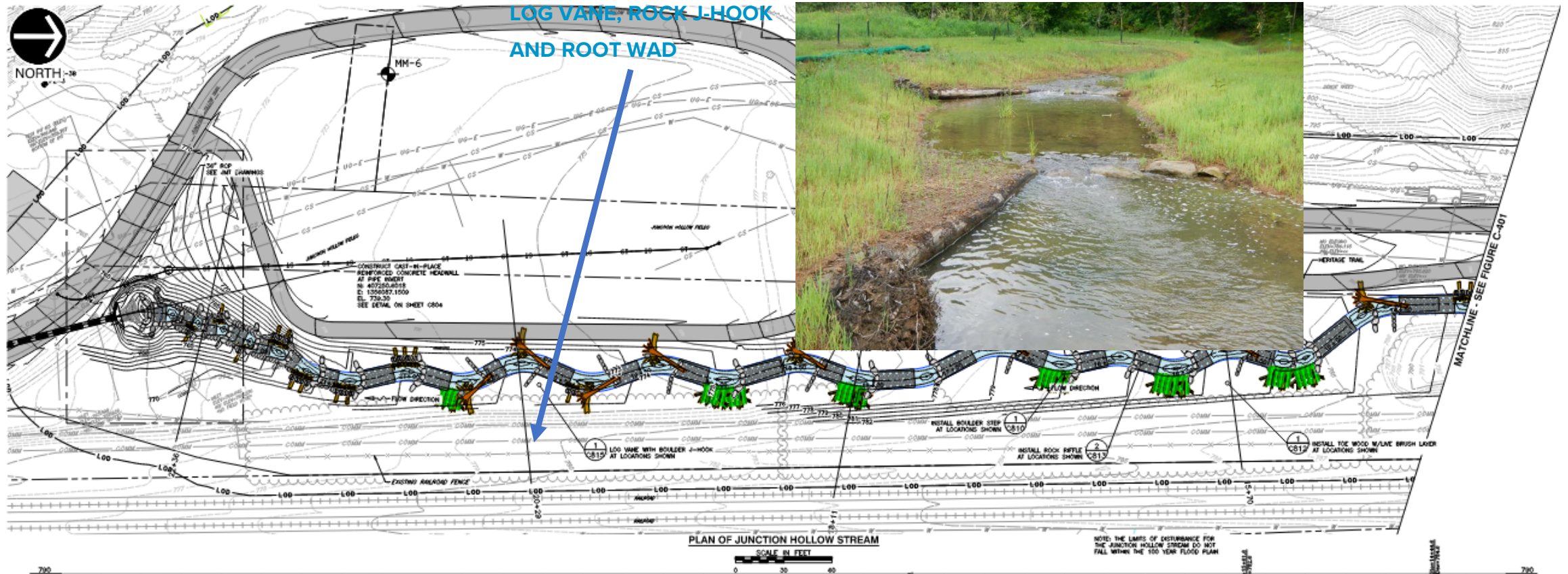
Junction Hollow-Across RR Tracks from PHL



Junction Hollow-South of Allies Bridge



Junction Hollow-at the Soccer Field

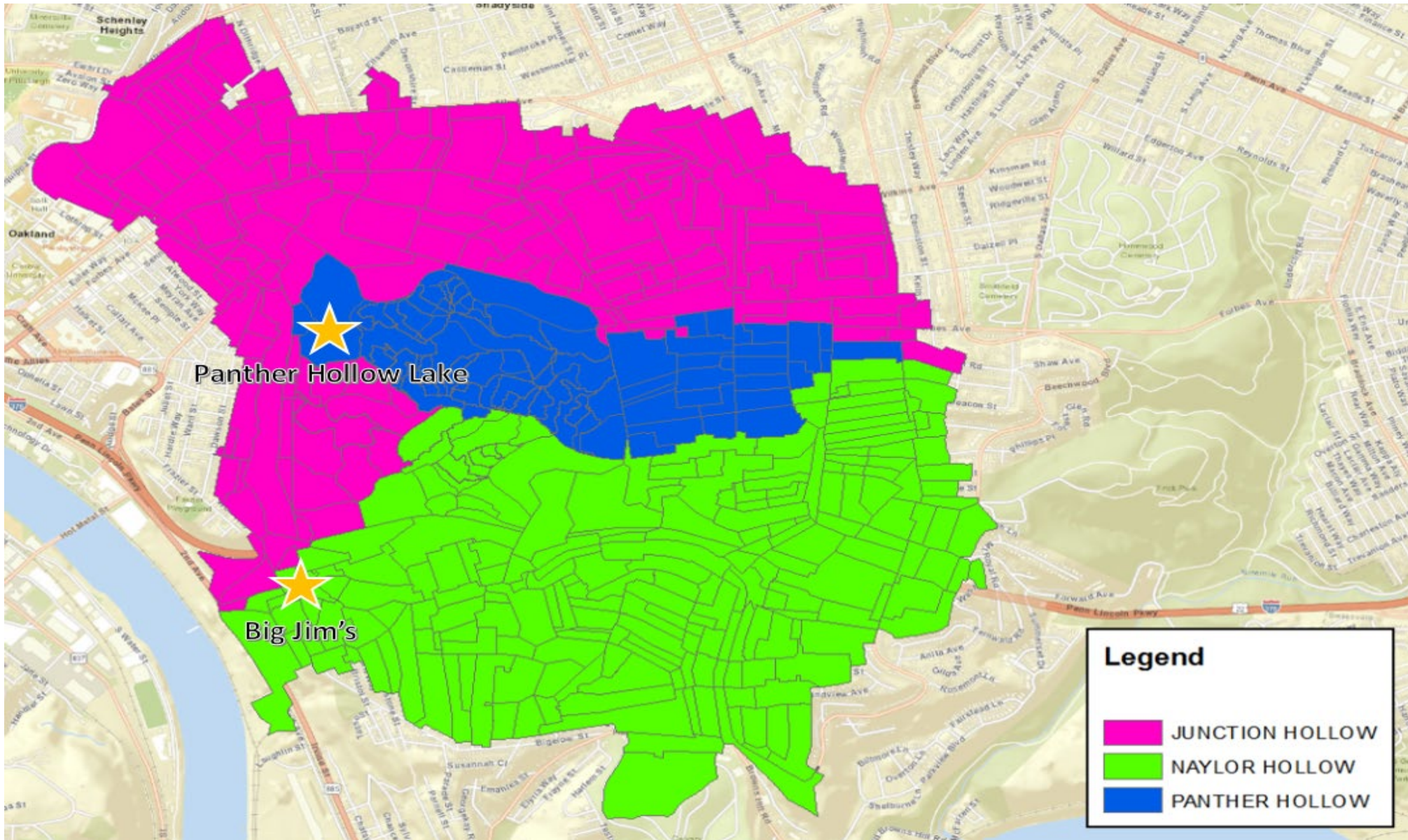


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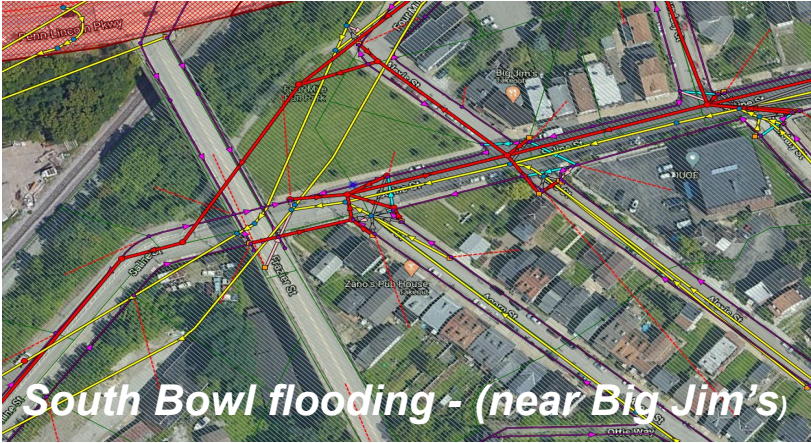
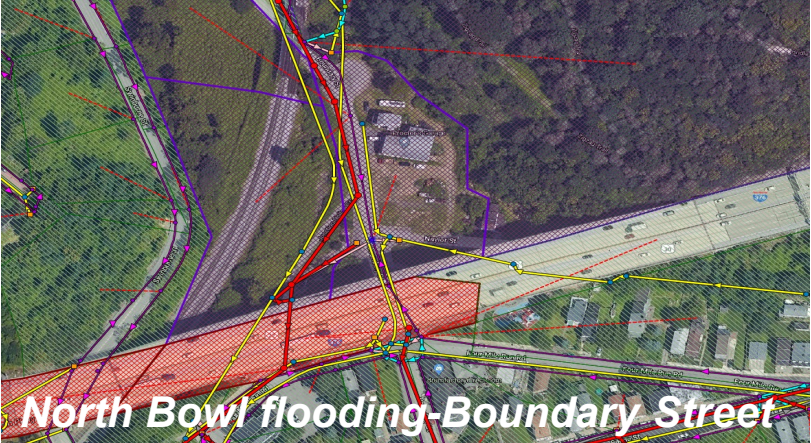
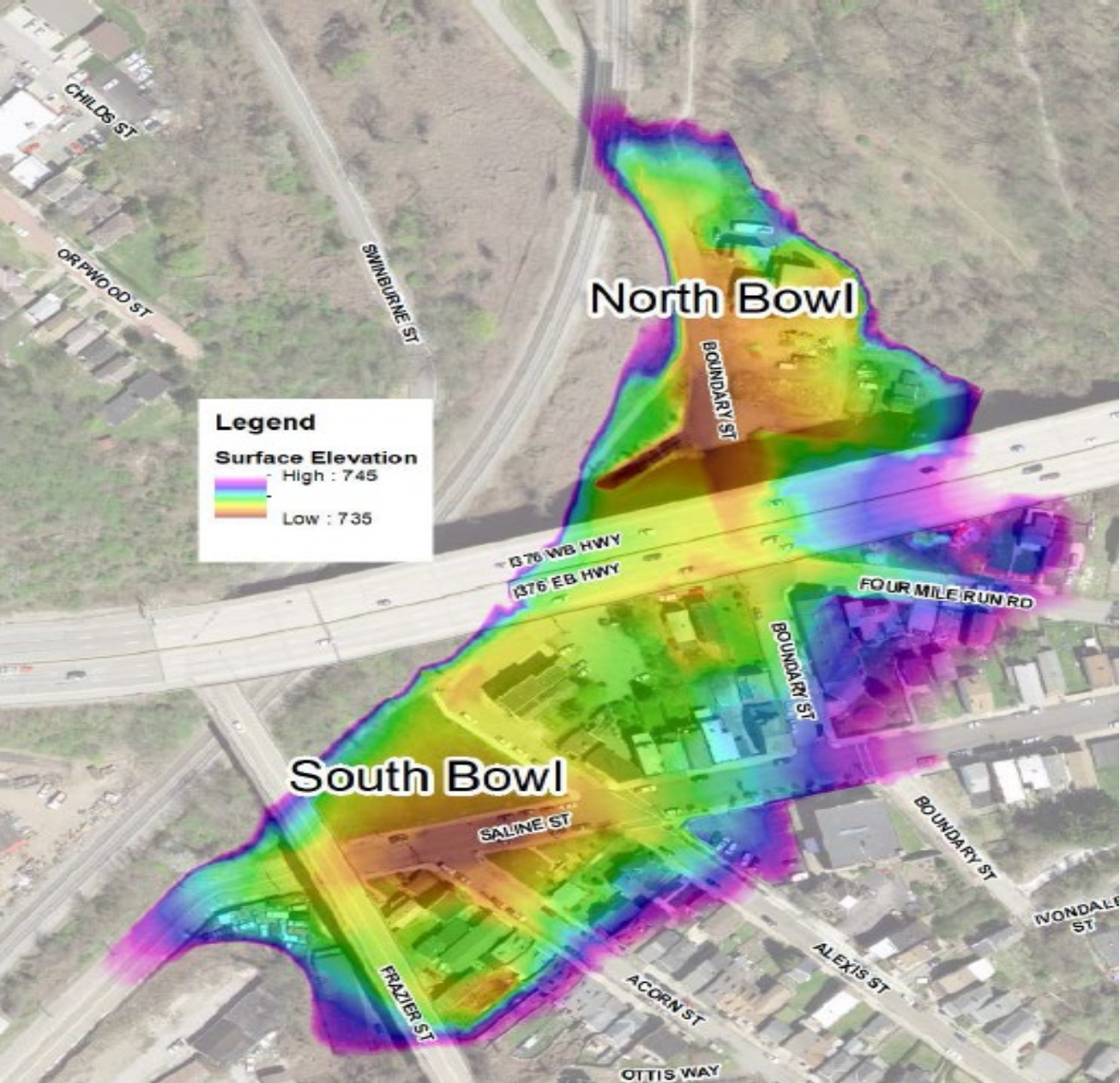
Enhanced Modeling and
Flood Mitigation Benefits



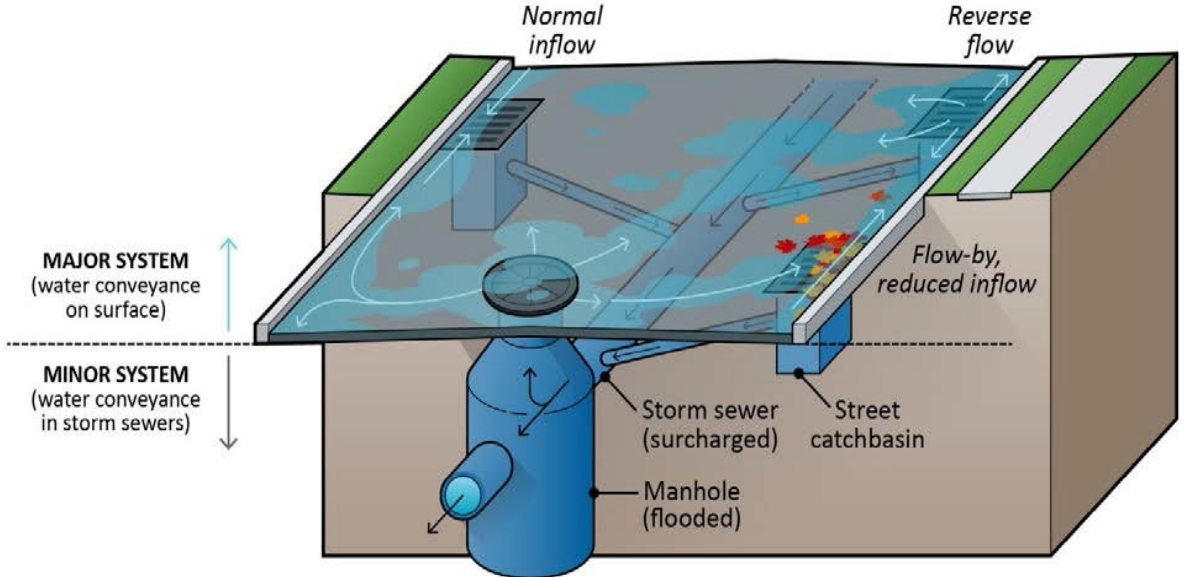
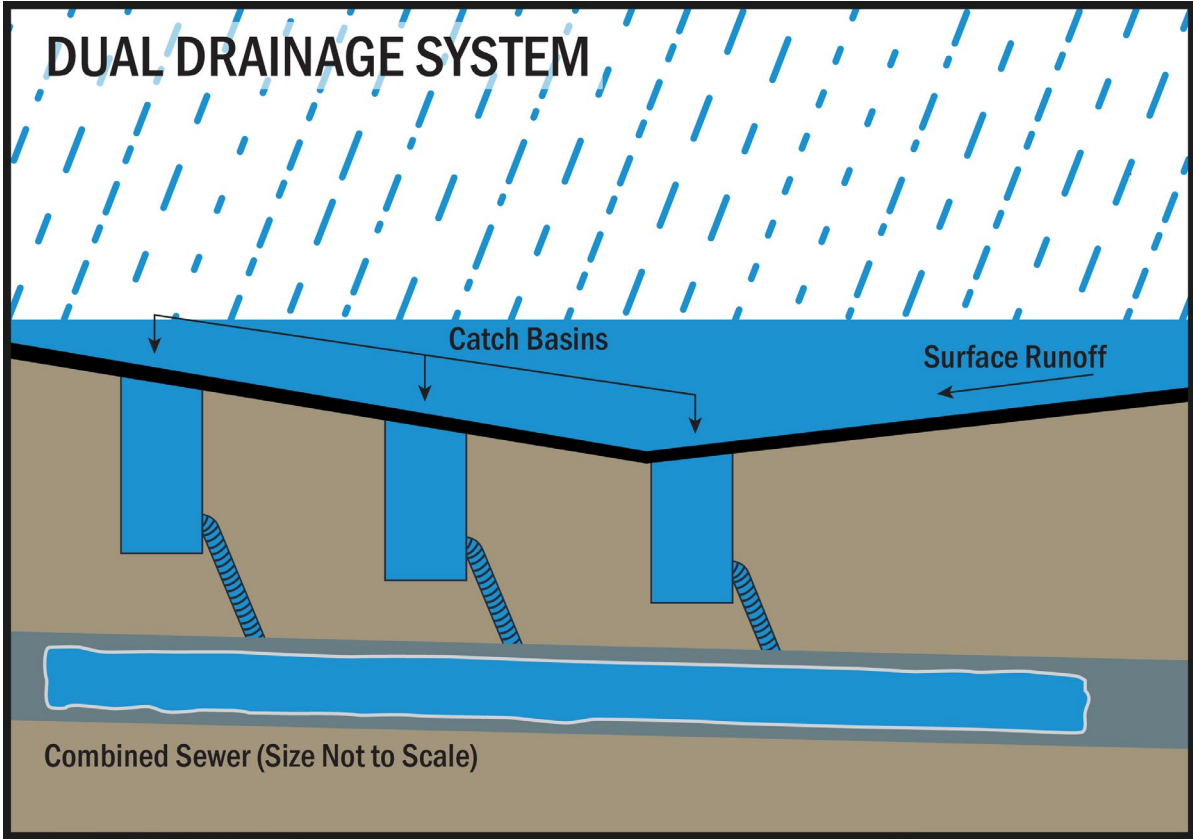
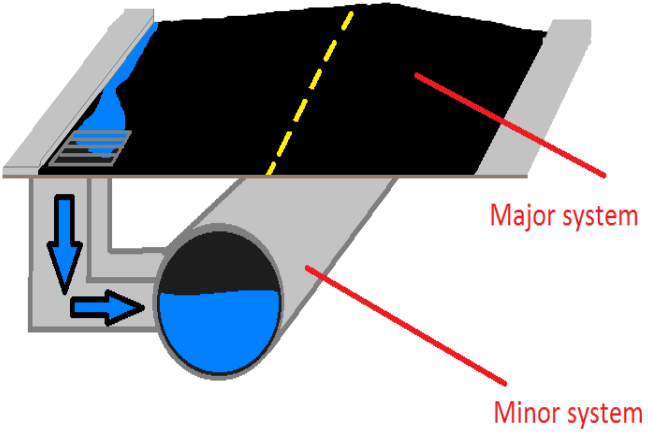
Four Mile Run Sub-Watersheds



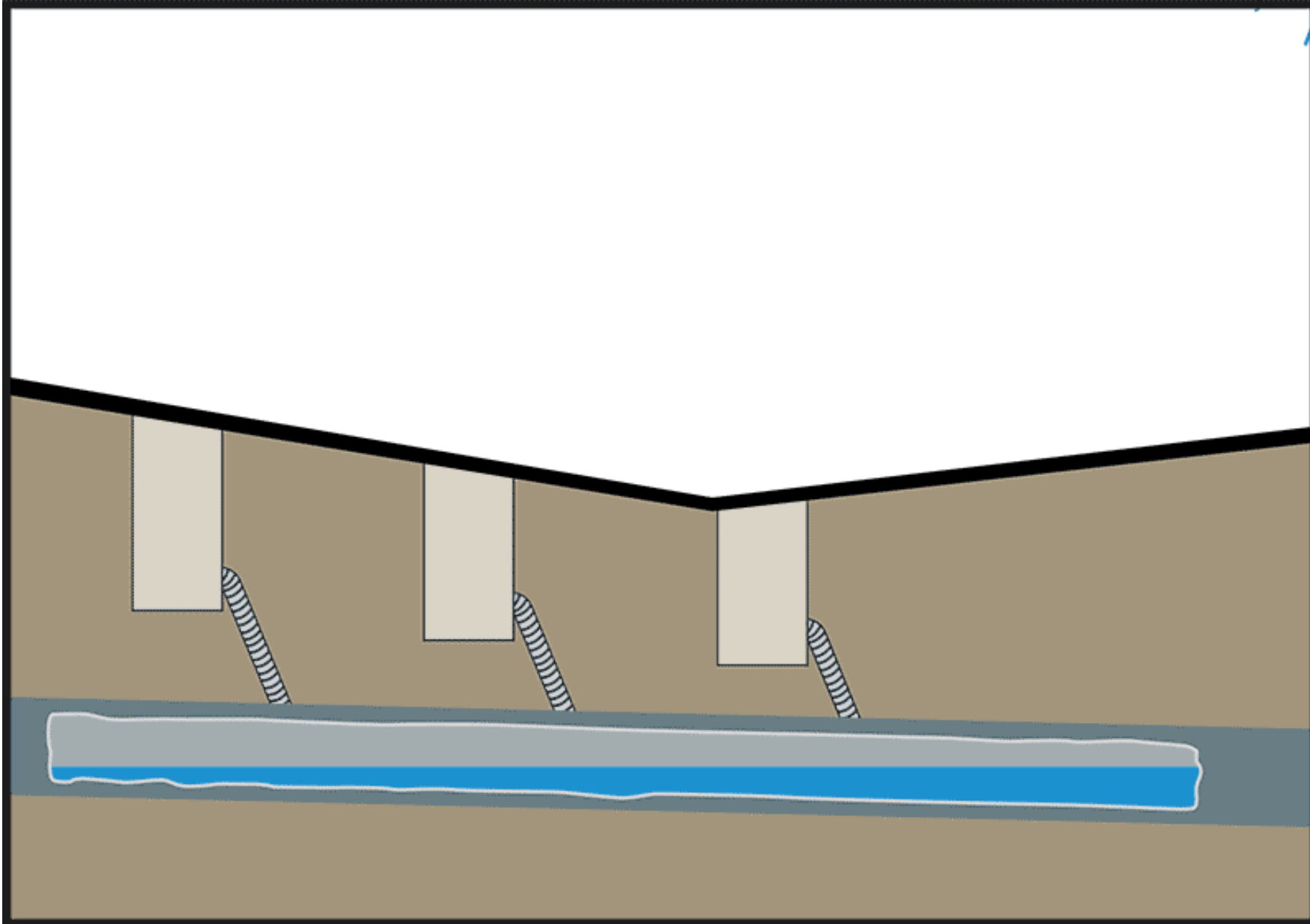
Points of Interest



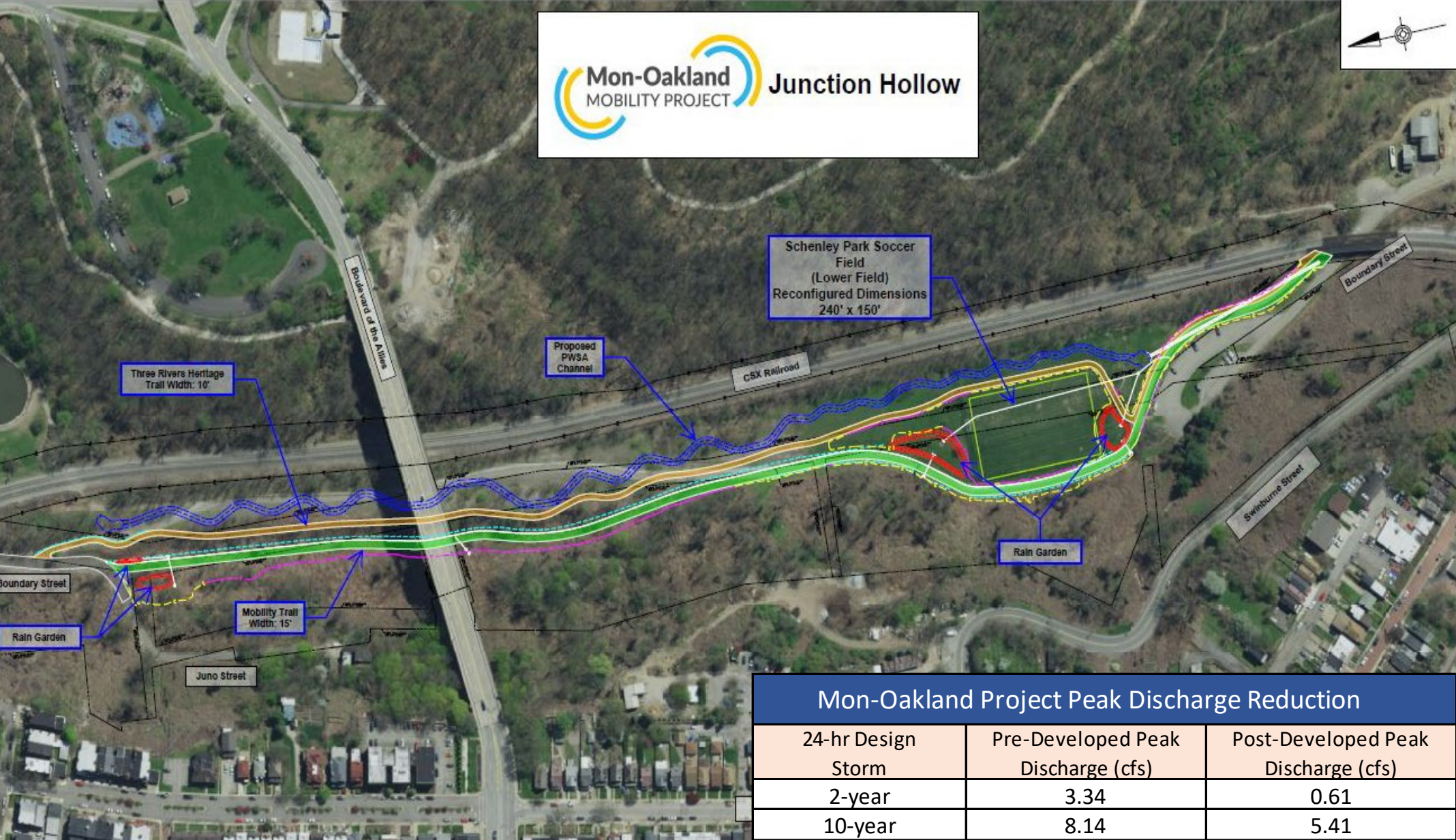
Dual Drainage Model Development Process



Dual Drainage Animation



Mon-Oakland Mobility Trail Stormwater Project



Mon-Oakland Project Peak Discharge Reduction		
24-hr Design Storm	Pre-Developed Peak Discharge (cfs)	Post-Developed Peak Discharge (cfs)
2-year	3.34	0.61
10-year	8.14	5.41

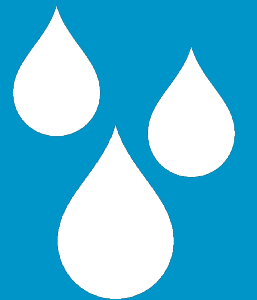
4MR Flood Mitigation Results

Recurrence	4MR Project Flood Mitigation		
	Existing Conditions	Proposed Alternative	% reduction in Structures at Risk
10-year	7	0	100%
25-year	11	8	27%
50-year	20	10	50%
100-year	29	16	45%

No change in the % reduction of structures at risk after incorporating the Mon-Oakland Mobility Corridor project due to incorporation of stormwater best management practices within the project

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Four Mile Run Connection
to Monongahela River





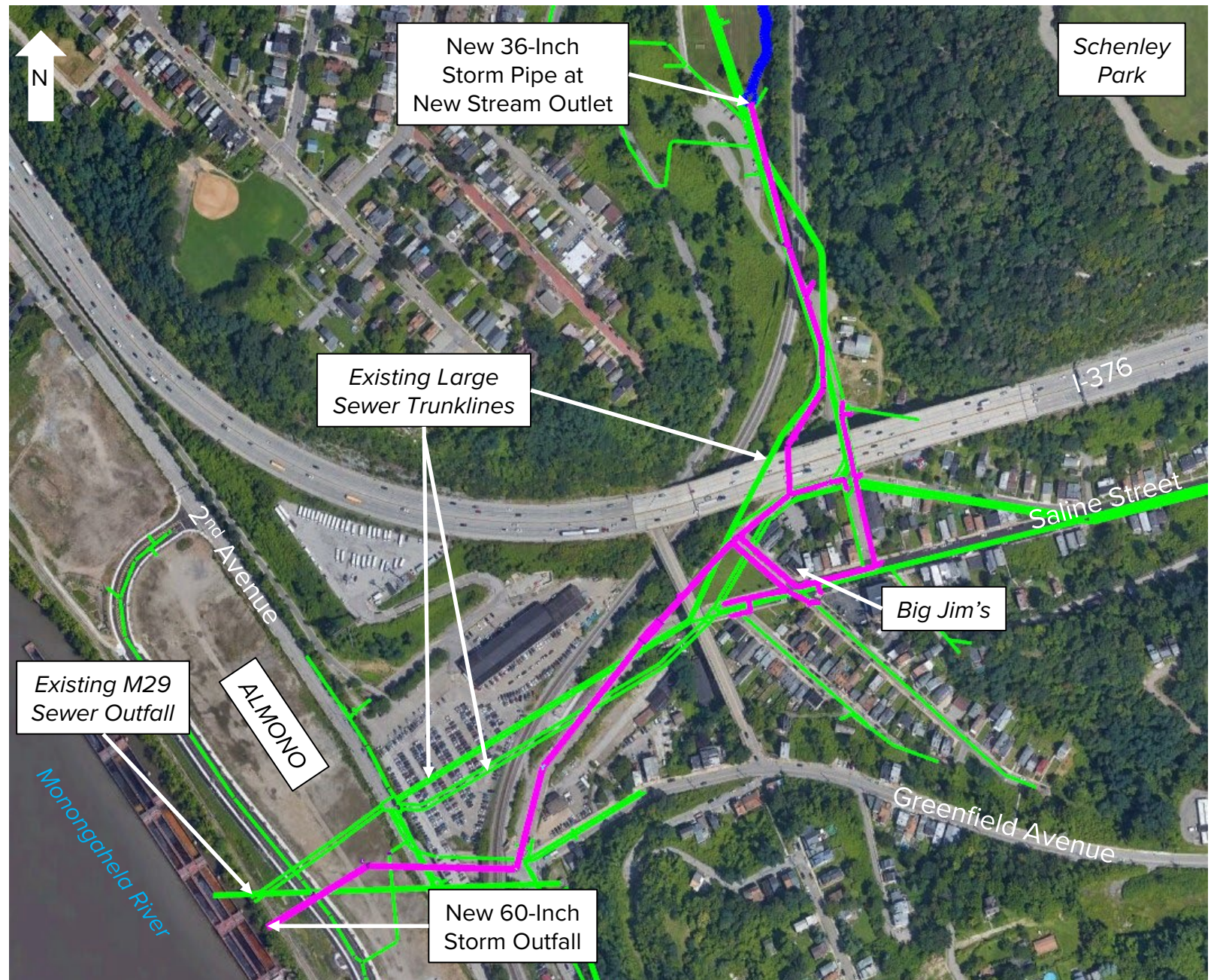
Stormwater Pipeline Project Limits

Challenges:

- topography
- utilities
- railroads (CSX & AVRR)
- highways
- bridges

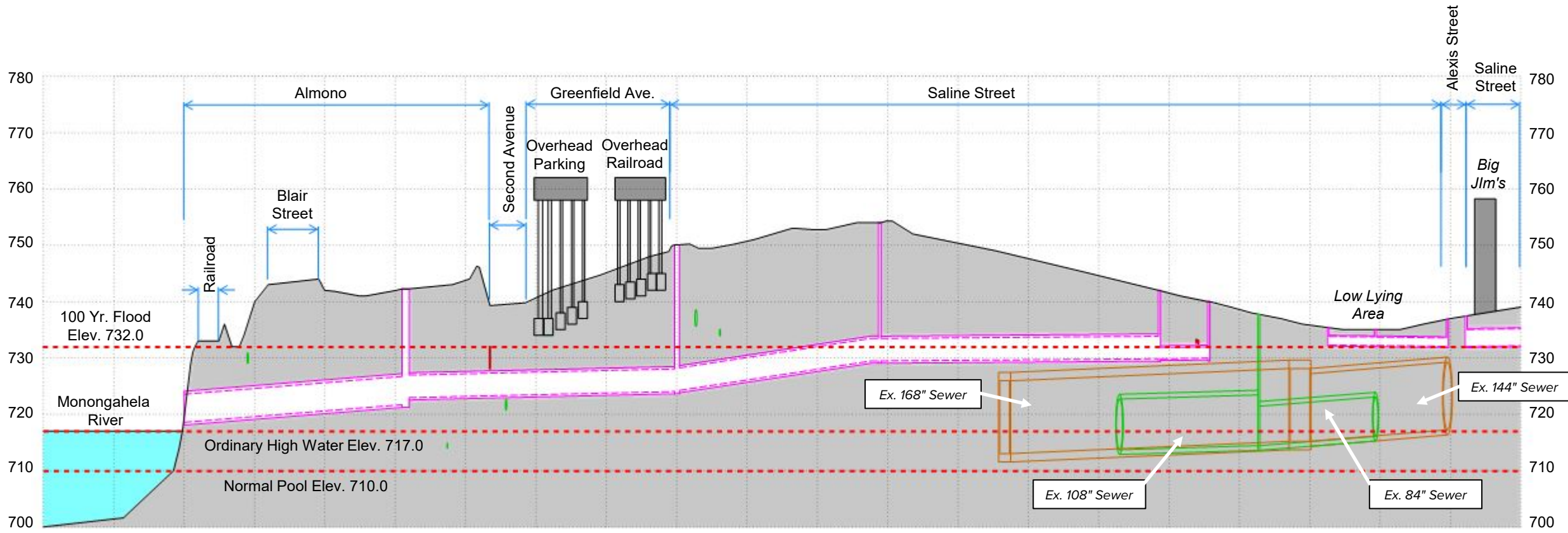
Map Legend

-  Existing Combined Sewer
-  Proposed Storm System



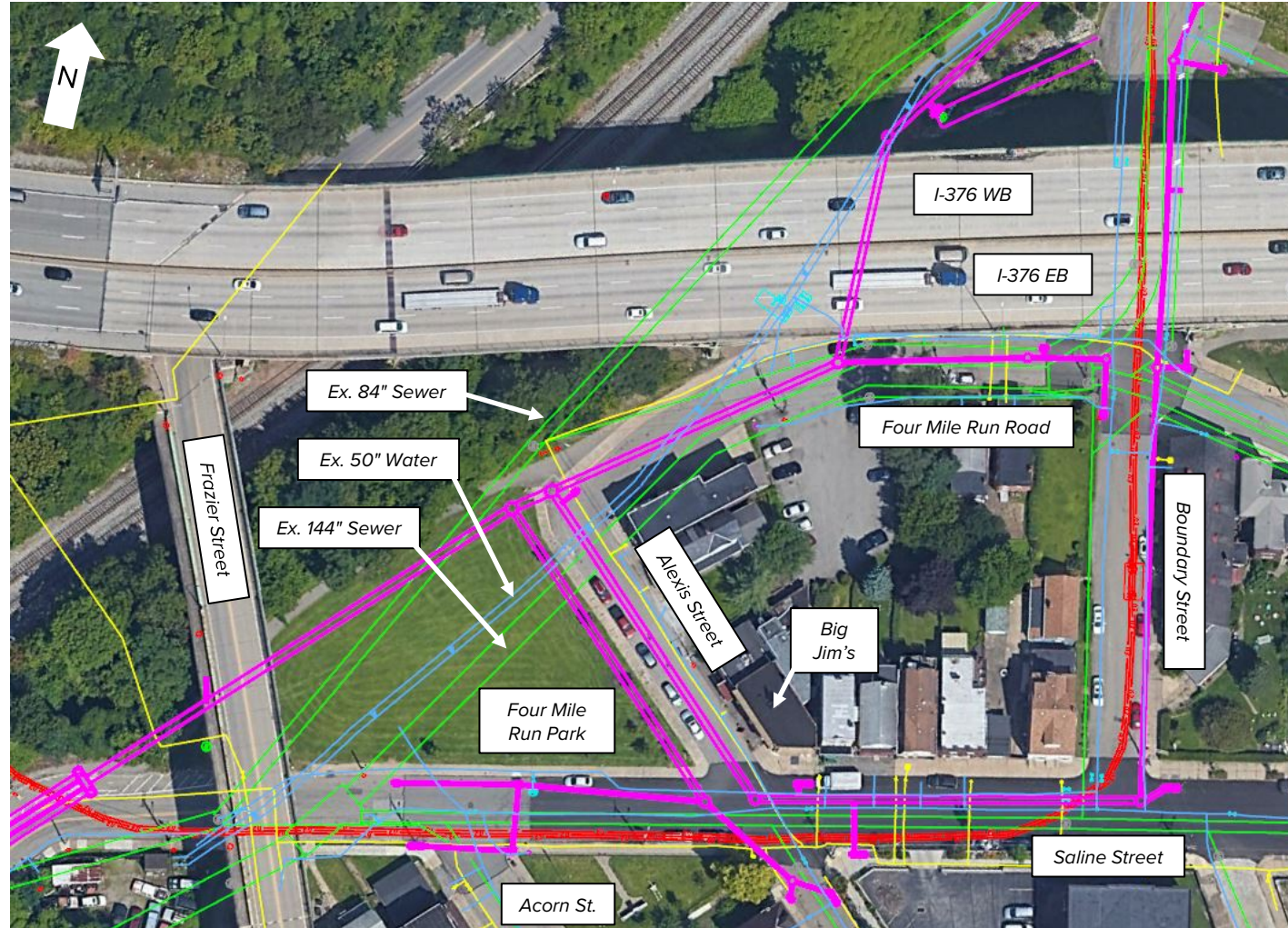
New Storm Profile

Monongahela River to Big Jim's on Saline St.



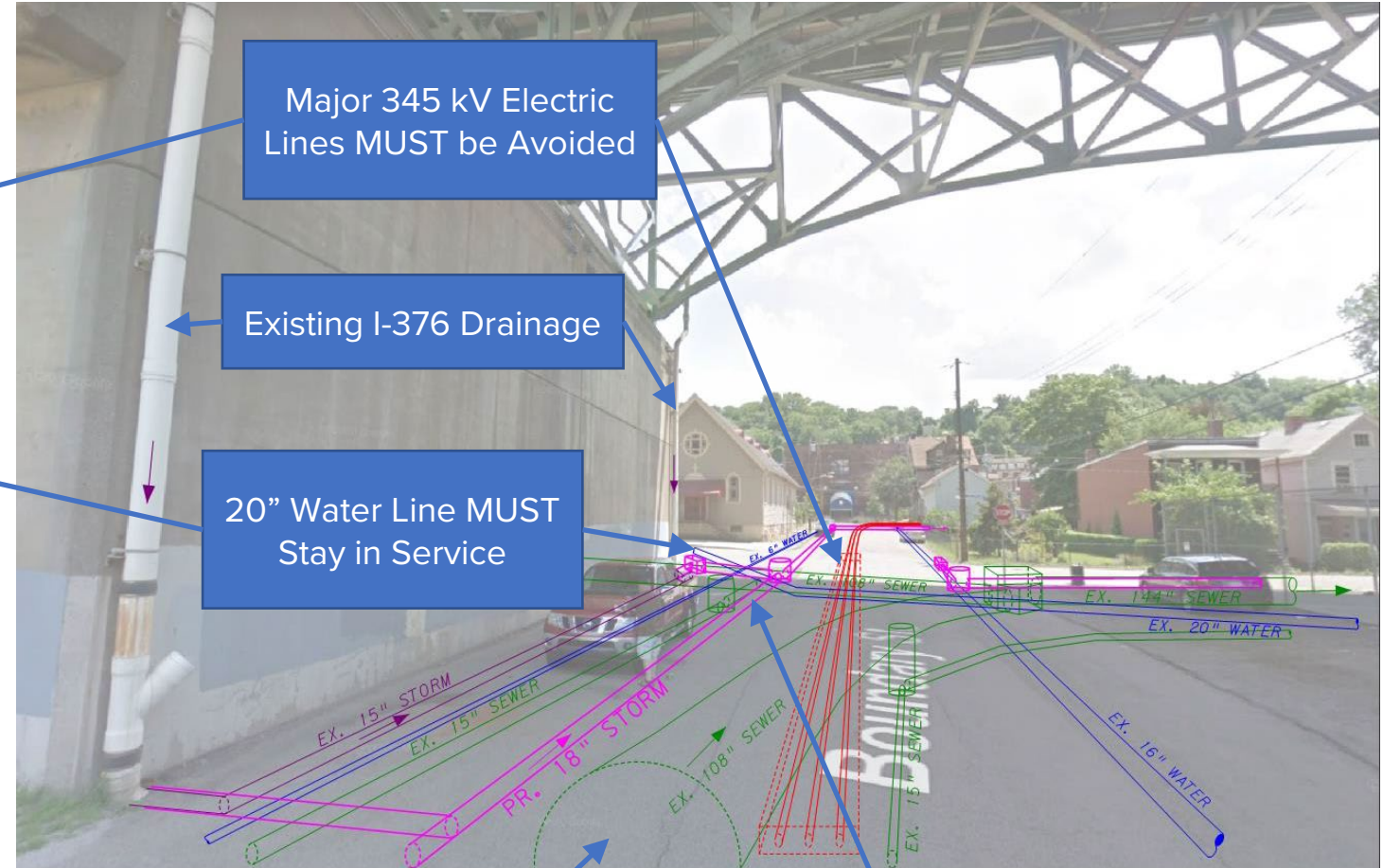
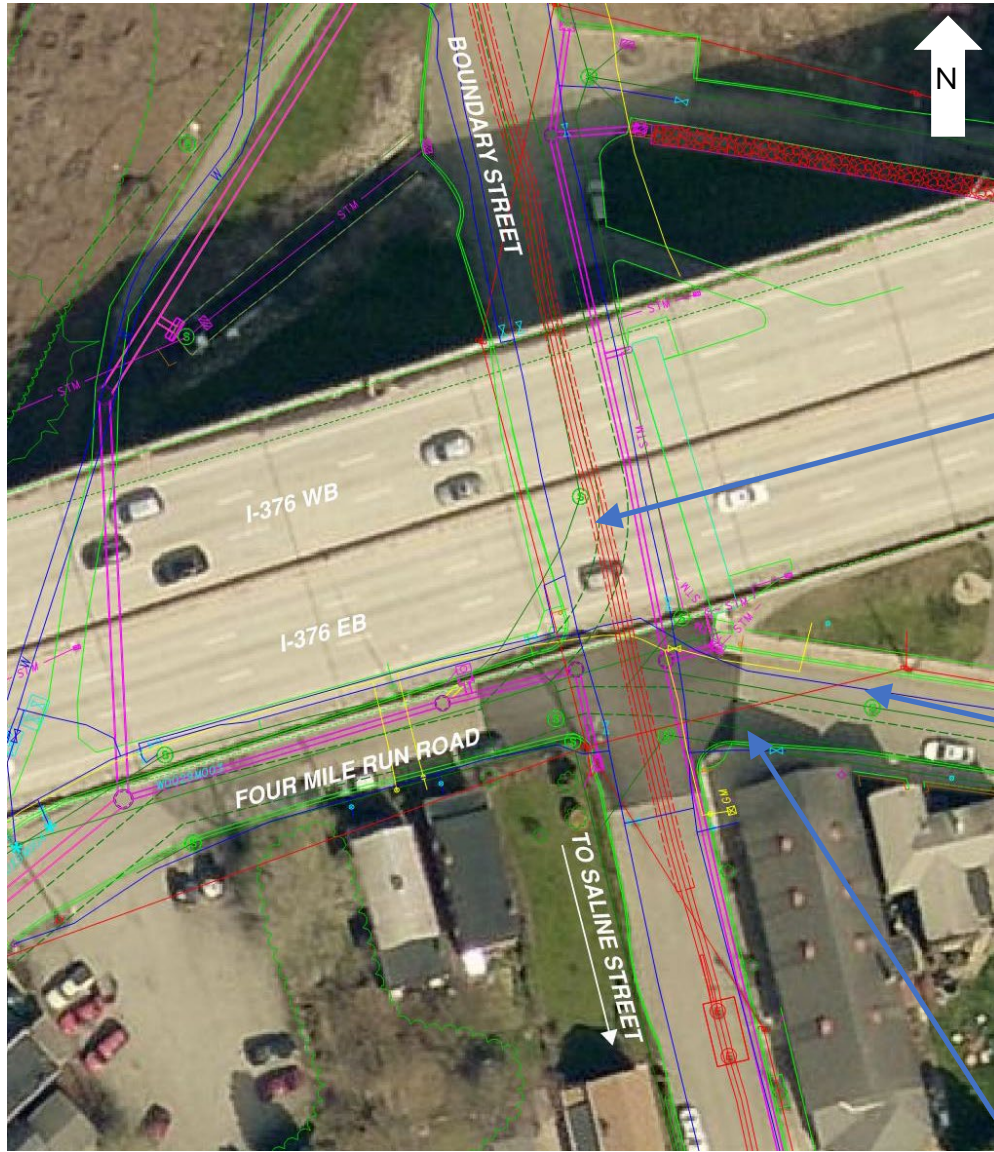
Major Utility Challenges

Saline Street / Alexis Street / Boundary Street



Map Legend	
	Proposed Storm
	Existing Sewer
	Existing Water
	Existing Electric
	Existing Gas

Disconnection of I-376– Boundary Street



Major 345 kV Electric Lines MUST be Avoided

Existing I-376 Drainage

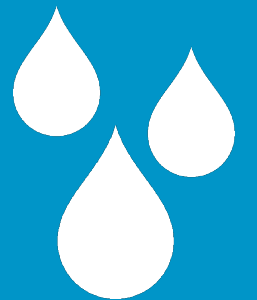
20" Water Line MUST Stay in Service

Existing Large Sewers Between 3-12' Depth

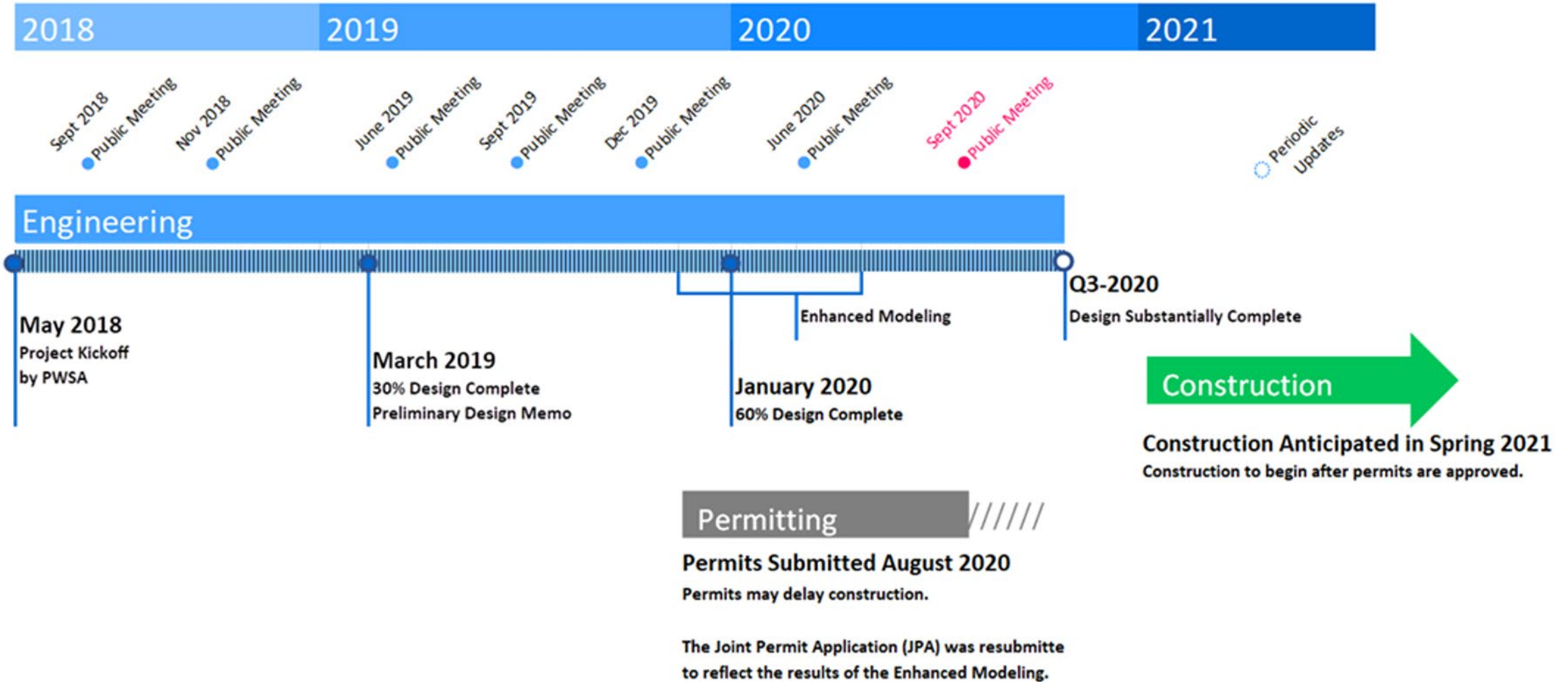
Proposed Storm-Only System

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Project Schedule and Costs



Project Schedule



Project Costs and Funding

Early Action Projects Design & Construction Costs

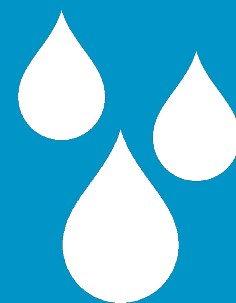
- Bridle Trail and Overlook Drive: \$537,000

Project Costs: ~\$28M

- Design, easement, permitting, and modeling fees: ~\$7M
- Stream and Panther Hollow Lake and Dam: ~\$1.5M
- 50-inch water relocation: ~\$6M
- Stormwater pipeline: \$10M
- Construction Management and Inspection: ~\$2.5M
- Future maintenance costs for operation of system: \$500,000 - \$1M

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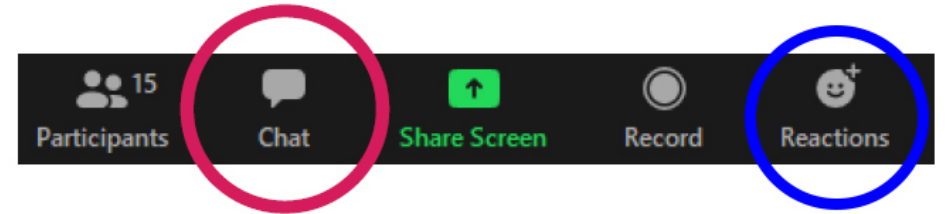
Questions and Answers



Facilitating Today's Q&A

Click the Chat Icon to ask a question

- We will answer questions in the chat first
- Located bottom of screen
- Looks like cartoon bubble
- Type question in dialogue box; press enter to send
- All attendees and facilitators will see your question



Open Q&A Discussion

- We will call on those with questions
- Everyone will have a chance to speak
- Speak politely; one at a time
- You may continue to use chat feature to ask questions

For more information or to ask a question after the meeting, please visit www.pgh2o.com/4mr