

## Things to Know

- You can leave and rejoin the meeting at any time (unless the meeting is at capacity or you are removed for inappropriate behavior).
- Multiple opportunities for questions will be provided throughout today's session.
- The meeting presentation will be posted at [www.a2gov.org/JuneStorm](http://www.a2gov.org/JuneStorm)
- All attendees are muted (instructions to unmute will be covered).
- Please keep video off throughout today's session.
- Attendee screen share is prohibited.
- Chat feature is not available during today's session; written comments can be submitted to [TBaughman@a2gov.org](mailto:TBaughman@a2gov.org)



## June 25-26 Storm Event

September 1 and 8, 2021



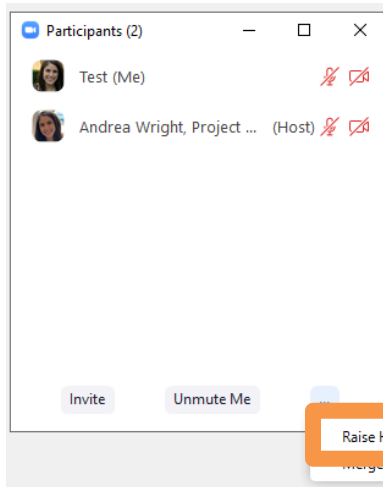


# Technology Overview

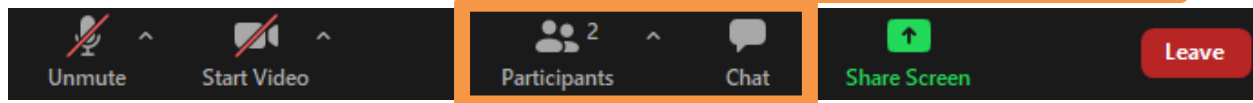
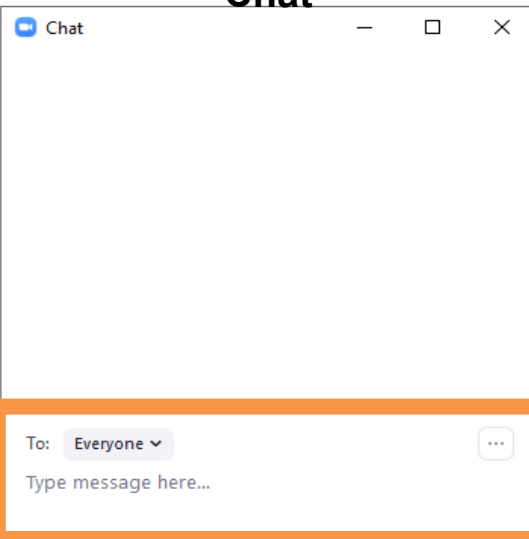
Ask a Question or Share a Comment

## Computer

### Raise Hand to Speak



### Chat



## Phone

- Select \*9 to raise your hand
- You will be identified by the last 3 digits of your phone number





## Zoom Meeting Guidelines

- **Commit to learning and avoid speculation** – we encourage you to ask questions so we can explore the issue together.
- **We want to hear from each of you!**
  - Raise your hand and be recognized to speak; there will be one speaker at a time.
  - When speaking, please move to a quiet area and silence any background sounds.
  - Speak loud and clearly.
  - Everyone will be provided a chance to speak before a repeat speaker.
- **Please remember the importance of rights and the dignity of other people:**
  - Critique ideas, not people.
  - Be thoughtful about your language so this can be a comfortable and respectful forum for all participants - inappropriate written and/or verbal comment or language, including personal attacks and accusations, will result in the attendee being removed from the meeting.

**Is there anything else anyone would like to add?**



# Agenda



- Introductions
- Purpose of meeting
- Efforts to date
- System overview
- Follow Up Steps
- Breakout Rooms
  - Review of storm event
  - Engineering study details
  - Washtenaw County Q&A
  - Neighborhood conditions





## Welcome and Introductions

- **City of Ann Arbor**

- Troy Baughman
- Molly Maciejewski
- Ron Hoeft
- Jennifer Lawson
- Kayla Coleman



- **Washtenaw County Water Resources Commissioner**

- Evan Pratt
- Harry Sheehan



- **OHM Advisors**

- Robert Czachorski
- Mackenzie Johnson



# Purpose



- Begin to discuss and share experiences during the June 25-26 storm event
- Review efforts to date
- Introduce the storm event analysis project
- Help the project team learn more about neighborhood conditions during the storm

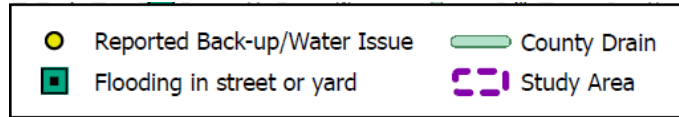




## Project Location

## June 25-26 Storm – Southeast Ann Arbor

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- Pittsfield Village
- Darlington
- Forestbrooke
- And other surrounding neighborhoods in Southeast Ann Arbor



# Actions to Date

- FEMA State of Emergency
  - <https://www.a2gov.org/news/pages/article.aspx?i=810>
- Insurance Claims
- Pittsfield Village Condo Board Meeting
- Public Works activities
- Capital Improvement Plan (CIP) Projects
- Contracted with engineering consultant, OHM Advisors, for Storm Event Analysis





# System Overview

## Stormwater System Infrastructure

- Collects stormwater runoff from the ground surface
- Discharges to rivers, streams, or lakes without treatment

## Sanitary Sewer Infrastructure

- Collects wastewater from the use of toilets, dishwashers, faucets, etc.
- Discharges to a wastewater treatment plant before discharging to a river, stream, or lake

### Important to Note:

- Sanitary sewer pipes are designed for expected sanitary sewer flow, not stormwater flow.
- Excessive stormwater entering the sanitary sewer system can cause basement backups and sewer overflows.



# System Overview

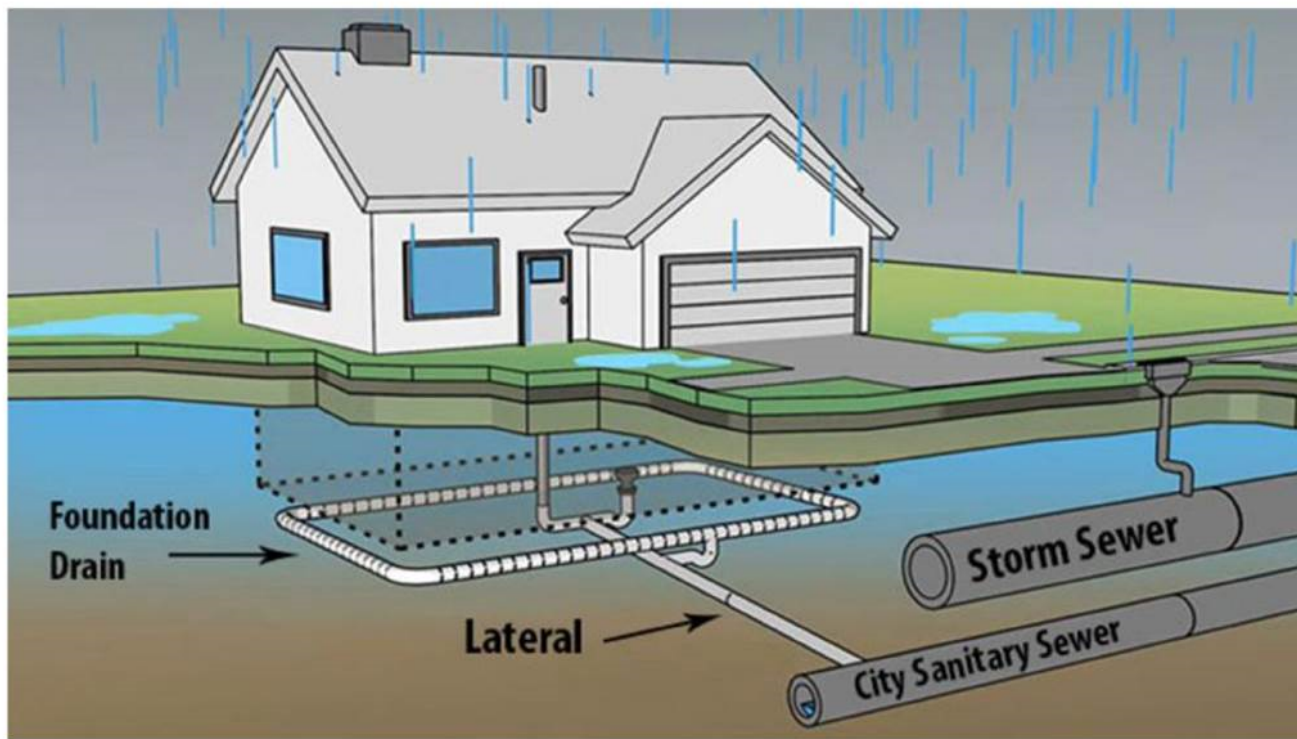


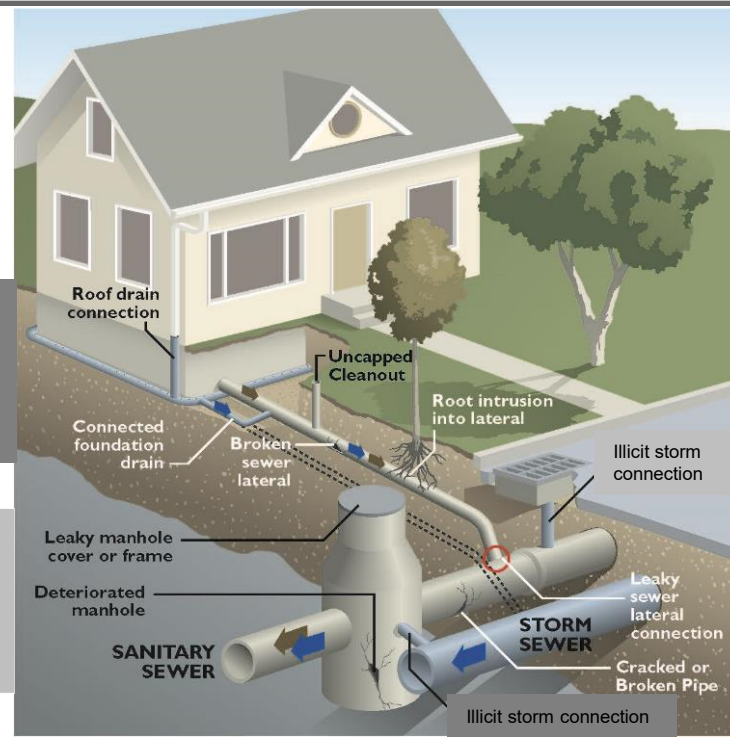
Image Credit:  
Milwaukee  
Metropolitan  
Sewerage District



# How stormwater may enter the sanitary sewer system:

**Infiltration:**  
Connected footing drain  
Broken sewer lateral  
Root intrusion into lateral  
Cracked or broken pipe

**Inflow:**  
Roof drain connection  
Uncapped cleanout  
Illicit storm connection  
Deteriorated manhole



# Jurisdictions



- City of Ann Arbor owns and maintains public stormwater and sanitary sewer systems throughout the City



- The Pittsfield Village Condo association owns and maintains some backyard stormwater pipes and private sanitary sewer pipes



- Washtenaw County Water Resources Commissioner's Office (WCWRC) is responsible for the County Drains that traverse through the City (e.g., Swift Run and Malletts Creek)



# Storm Event Magnitude



- The amount of rain that fell within the City during the June 25-26 storm had a 1-2% annual probability of occurring
- Utility systems are typically designed to handle approximately 3 inches of rainfall over 24 hours
  - The rainfall on June 25-26, 2021 totaled over 5 inches in some areas of the City
- The focus of the Storm Event Analysis study will be to identify best practices to minimize property damage for future large rain events





## Follow Up Steps

- Public engagement
  - Meeting summaries are planned to be posted within two weeks of meeting
  - Individual interviews/questionnaires to share flooding experiences
  - Additional community discussions
- Technical engineering review, including:
  - Flow meter and rain gauge data
  - Stormwater and sanitary sewer hydraulic models
- Determine whether any recommendations could minimize future flooding and/or basement backup risks
  - Considering community input and engineering analysis



[Contact the project team at any time to request an individual meeting or discussion.](#)



# Questions and Discussion

## June 25-26 Storm Event

... Details

**What questions do you have about the storm?**

**Talk to the City's Project Manager**

## Project Details/Study

... Engineering analysis  
... Public engagement process

**What questions do you have about next steps?**

**Share feedback on the draft questionnaire**

## County Q&A

...Overview of County Drains

**What questions do you have about jurisdiction of storm and sanitary infrastructure ?**

## Neighborhood conditions related to the storm event

... What we've heard so far.

**What did you experience during the storm?**



# Breakout Room: Storm Event Details





## June 25-26 Storm Event

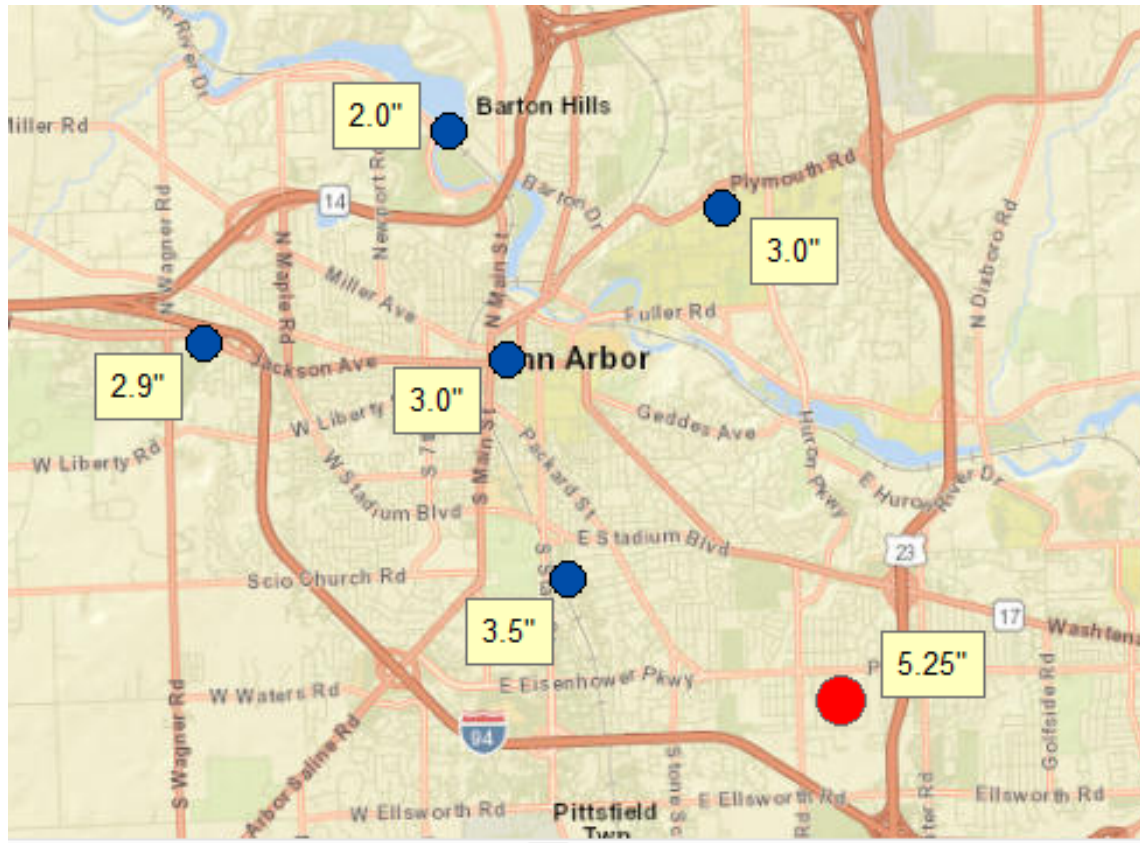
... Details

**What questions do you  
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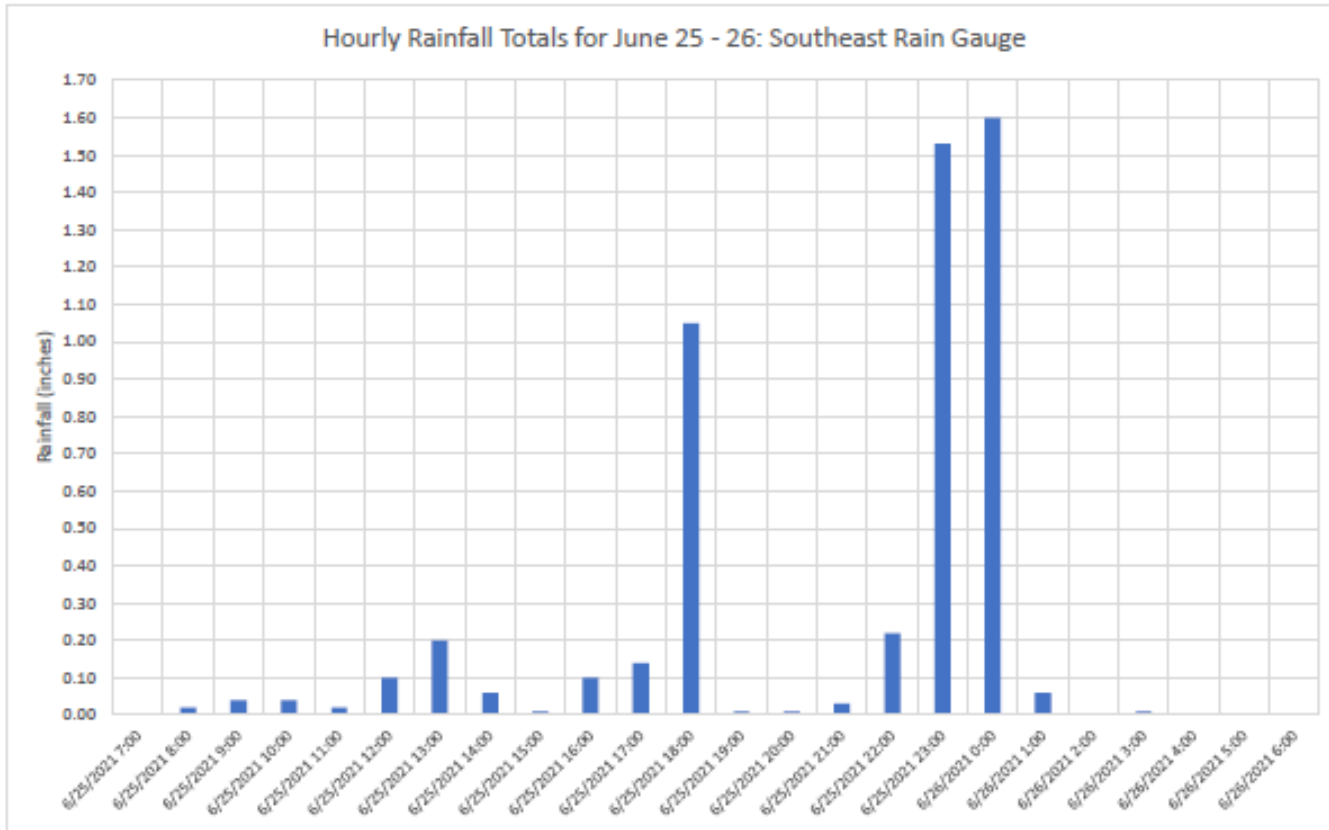
**Talk to the City's Project  
Manager**

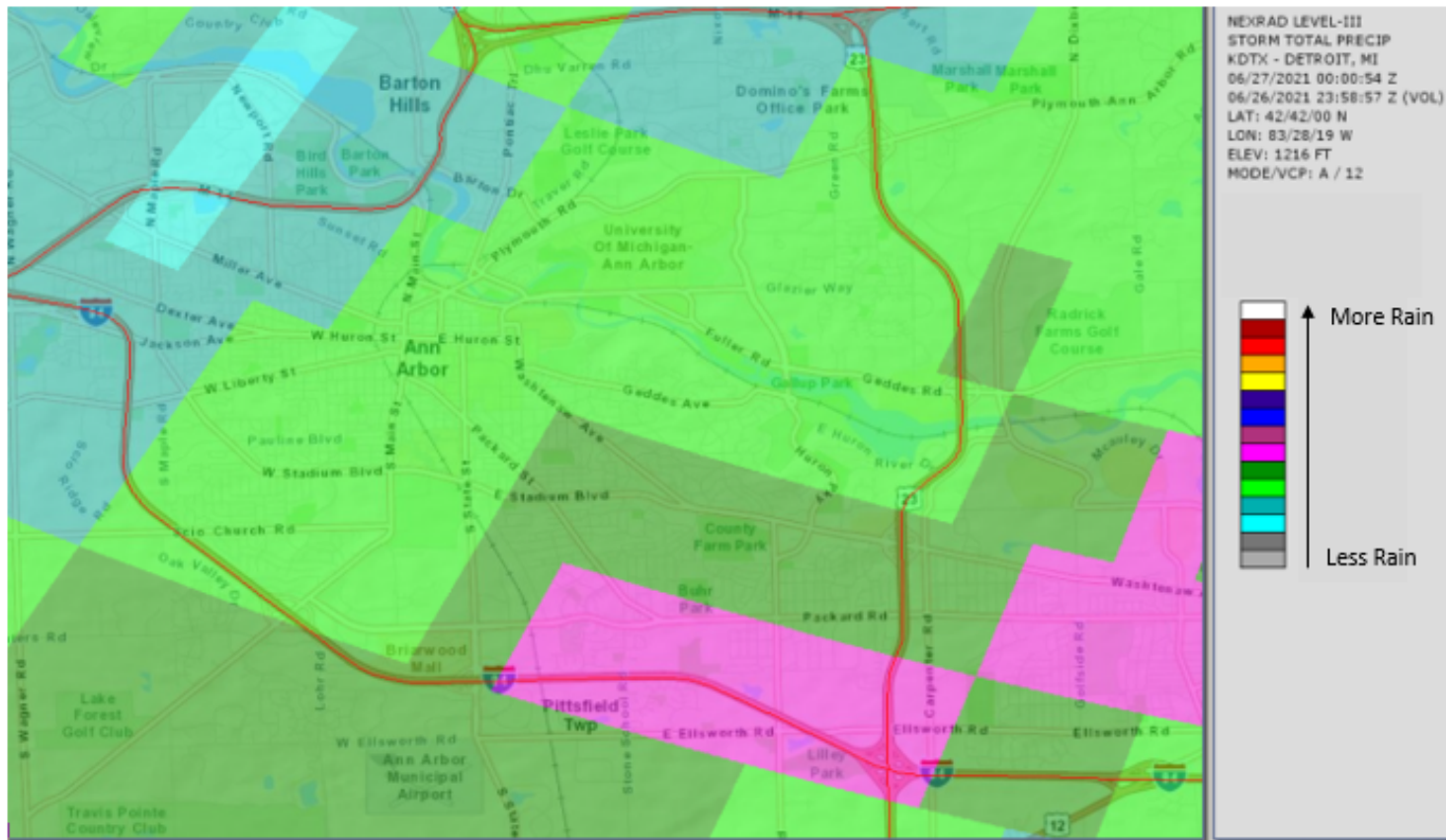


# June 25-26 Rainfall Totals



# Hourly Rainfall Totals – SE Ann Arbor





June 25-26 NOAA Radar Rainfall Data

\*This map shows the spatial variability of the rainfall. It can be seen that more rain fell in the south and southeastern parts of the City compared to the northern part of the City.



## What is Annual Exceedance Probability ?

- An annual exceedance probability (AEP) is the probability of an event occurring in any given year.
  - 1% AEP (100 yr storm)
  - 2% AEP (50 yr storm)
  - 4% AEP (25 yr storm)
  - 10% AEP (10 yr storm)



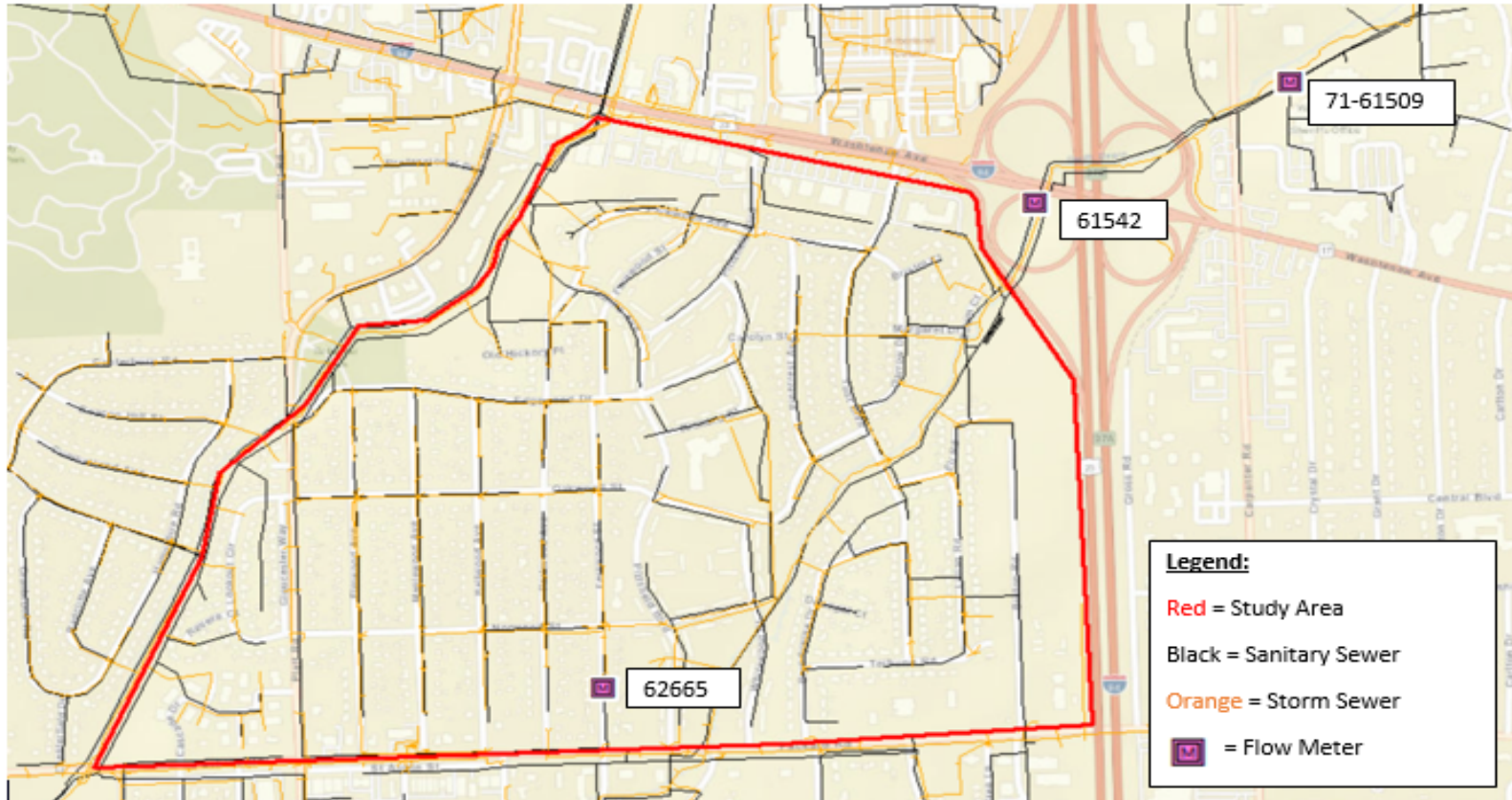
# June 25-26 Storm Event



- 5.25" in approximately 19 hours
- For 12hr period, storm event intensity exceeded 1% probability (100-yr) storm



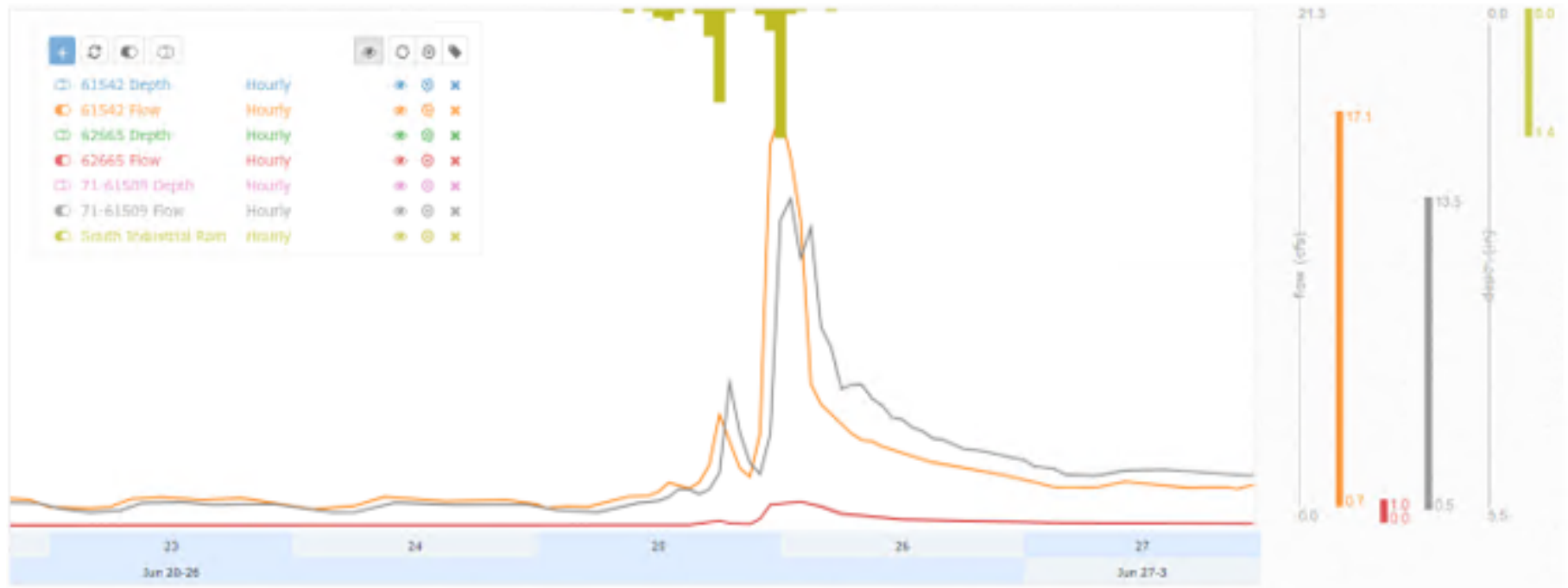
# Sanitary Flow Meters



Locations of Flow Meters Near Study Area



# Sanitary Flow Meters

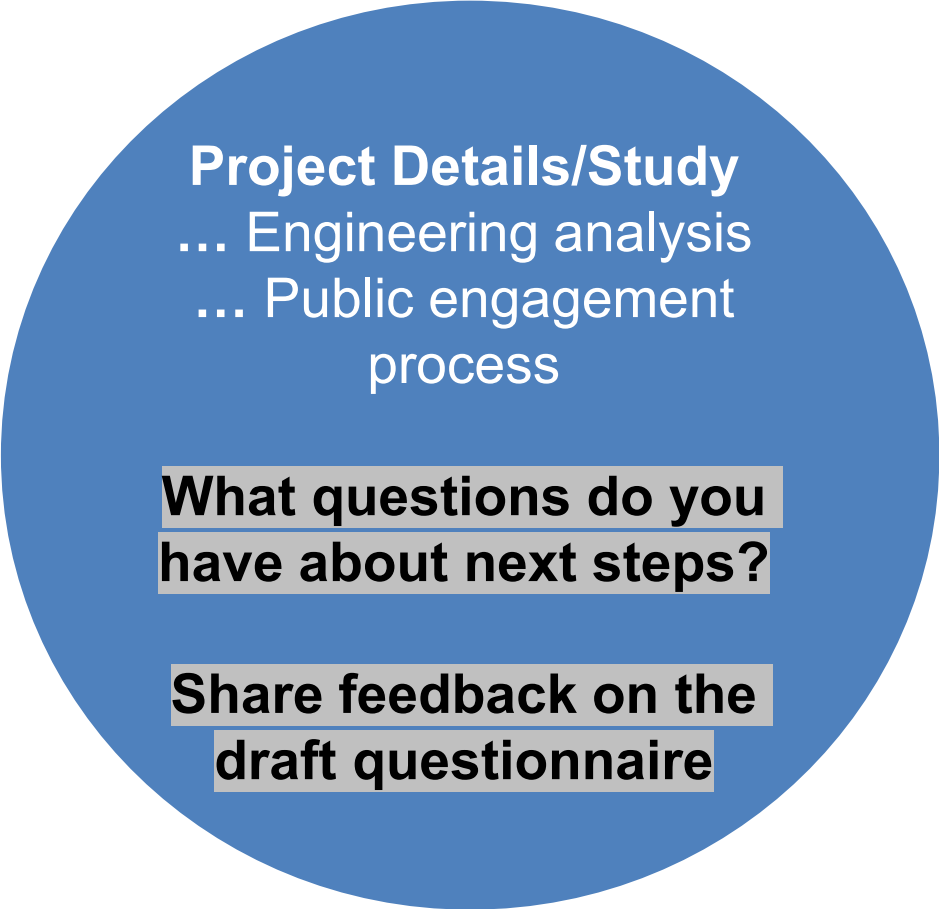


Flow Data of 3 Flow Meters Near Study Area





# Breakout Room: Project Study Details



**Project Details/Study**  
... Engineering analysis  
... Public engagement  
process

**What questions do you  
have about next steps?**

**Share feedback on the  
draft questionnaire**



Meetings



Updates at  
[a2gov.org/JuneStorm](http://a2gov.org/JuneStorm)

Open communications



**On-going Public Engagement**

August-September

October

November-December

**Understand what happened:**

- Public meeting input
- Resident interviews
- Community survey
- Interview staff (City, County, Pittsfield Village maintenance)
- Data collection (rains, flows, locations)

**Evaluation:**

- Maps
- Rain and flow data analysis
- Simulate event with City's storm and sanitary models
- Look for trends, explanations, causes

**Recommendations:**

- Improvement(s) to minimize future flooding and/or basement backups
- Follow-up task(s) based on findings
- Technical memorandum
- Plan for next steps

# DRAFT Survey questions:

1. Do you have a basement?

No → Did you experience flooding in your home?

Yes → Did you have water in your basement?

- How much water (depth)?
- Coming from inside the house or outside the house?
- Coming from the walls/windows?
- Coming from a floor drain or sump pump?

2. Did you lose power? Time frame?

3. Do you have a sump pump? Did it operate during the June 25-26 storm?

4. Has this home experienced basement backups or flooding before?

- When ?
- How much water (depth)?

## DRAFT Survey questions:

5. Is your footing/foundation drain connected to the sanitary sewer system?

No → when was the footing drain disconnected from the sanitary sewer system?

6. Do you have a check valve installed on your sanitary sewer service line?

Yes → when was the check valve installed?

- Footing/Foundation Drain = Pipes that are installed under the building foundation or basement floor to collect water and drain it away from the building.
- Check Valve = Valve installed on a sewer line that opens to allow sewage to flow out, but then closes to prevent sewage from flowing in the reverse direction (backing up into the house).

# DRAFT Survey Feedback

- Do these questions make sense?
- What other questions should we ask?
- Other feedback/input on the questionnaire?

# Breakout Room: Neighborhood Conditions



Jam Board – September 1, 2021 Meeting





Jam Board – September 8, 2021 Meeting



**Project Website:** [a2gov.org/JuneStorm](http://a2gov.org/JuneStorm)



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[Mackenzie.Johnson@ohm-advisors.com](mailto:Mackenzie.Johnson@ohm-advisors.com)



**Thank you!**





## Internal Resource Slide

**Sump pump info:** [www.a2gov.org/sumppumps](http://www.a2gov.org/sumppumps)

**Developer Offset Mitigation (DOM) Program:**  
[www.a2gov.org/DOM](http://www.a2gov.org/DOM)

**FEMA Info:** [www.a2gov.org/news/pages/article.aspx?i=810](http://www.a2gov.org/news/pages/article.aspx?i=810)

**City Claim Info:** [www.a2gov.org/departments/finance-admin-services/treasury/Pages/Filing-a-Claim-Against-the-City-.aspx](http://www.a2gov.org/departments/finance-admin-services/treasury/Pages/Filing-a-Claim-Against-the-City-.aspx)

