

# Welcome!

## We will begin shortly...

Virtual Meeting Schedule	
6:00 – 6:10	Welcome
6:10 – 6:45	Presentation
6:45 – 7:00	Presentation Q & A (General)
7:00 – 7:45	Focus Group Discussions/Zoom Breakout Rooms
7:45 – 8:00	Come Back Together/Wrap-Up

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# East Badger Mill Creek Watershed Study Public Information Meeting No. 2

by City of Madison Engineering Division  
January 14, 2021

*Please Note: This meeting is being recorded. It is a public record subject to disclosure. By continuing to be in the meeting, you are consenting to being recorded and consenting to this record being released to public record requestors.*

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# Evening Overview

- ▶ Welcome (Hannah Mohelnitzky, City of Madison)
- ▶ Presentation (Matt Allie, City of Madison)
- ▶ Q&A (facilitated by Hannah Mohelnitzky, City of Madison)
  - Submit questions through Zoom Q&A
    - *To find the Zoom Q&A Box, hover over the edge of your screen. A toolbar will appear and you can click on “Q&A”*
  - Questions answered at the end of the Presentation
- ▶ Wrap Up (Hannah Mohelnitzky, City of Madison)
- ▶ Breakout to Focus Groups (City of Madison staff)
  - A link for the Focus Groups will be posted in the Zoom Group Chat box.

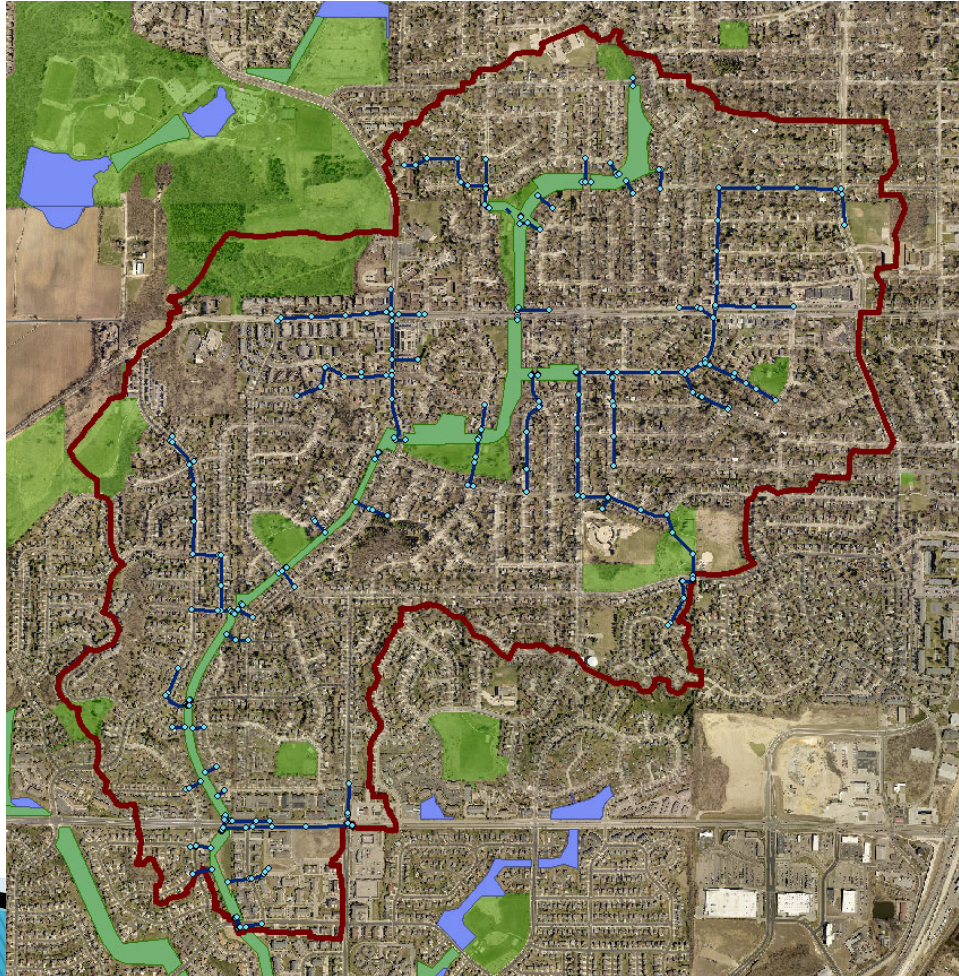
# Presentation Overview

- ▶ Definitions of commonly used terms
- ▶ Project location
- ▶ Watershed characteristics
- ▶ Progress to date
- ▶ Tonight's meeting
  - Present Progress to date
  - Receive feedback from participants
  - Will not present proposed solutions
- ▶ Next steps
- ▶ Watershed study limitations

# Definitions of commonly used terms

- ▶ **Stormwater:** rainwater produced from a rain event
- ▶ **Stormwater runoff:** the portion of the rainwater that does not soak into the ground
- ▶ **Stormwater inlets:** grates in the ground that take in stormwater runoff; connected to the stormwater conveyance system
- ▶ **Detention ponds:** ponds designed to hold stormwater runoff to improve water quality and/or help prevent flooding
- ▶ **Subcatchments:** smaller sub-areas of a watershed
- ▶ **Level loggers:** monitoring equipment used to measure the level in a pond, channel, storm sewer, etc
- ▶ **Rain gauges:** monitoring equipment used to measure the depth of rain that fall in a rain event
- ▶ **Model:** computer software that is used to evaluate the stormwater conveyance system

# Project Location



A watershed is an area of land that drains to a single location.

This is the East Badger Mill Creek watershed in the City of Madison.

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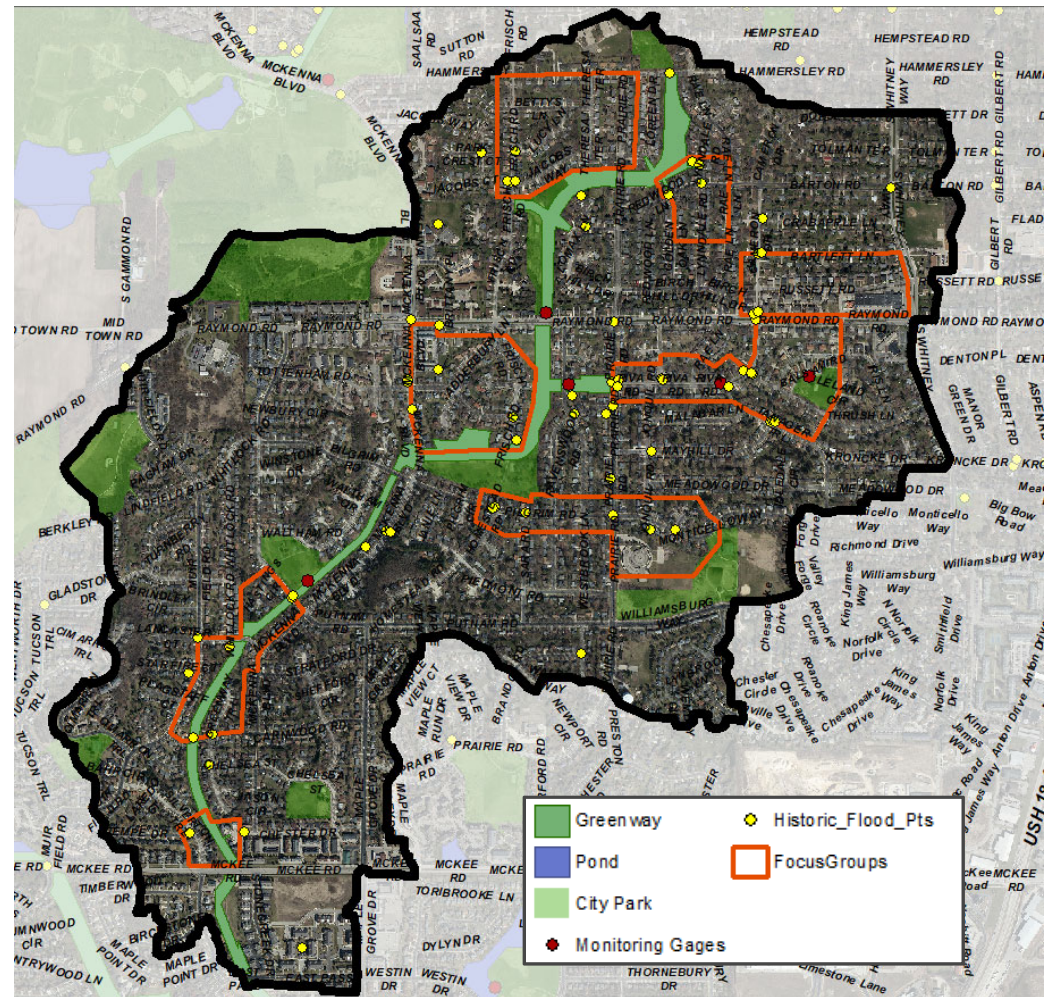


# Watershed Characteristics

Item	Quantity
Watershed Area (acres)	1,297
Number of Subcatchments (#)	111
Public Stormwater Inlets and Access Structures in Watershed (#)	805
Total storm sewer pipes in Watershed (#)	698 segments; 10.4 miles
Storm sewer pipes in Model (#; length)	221 segments; 6.9 miles
Open channels in Model (#; length)	11 segments; 2.7 miles
Detention Ponds in Model (#)	1

# Progress To Date

- Data collection
  - Ground/storm sewer survey
  - Monitoring – rain depth & intensity, flow depth in channels, and flow rate in selected storm sewer
  - Flood reports
  - Focus groups – flooding experiences



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# Progress To Date

## Public Information

- Public Input Meeting #1 – October 29, 2019
- Focus Groups – 11 Focus Groups in July–August 2020
- Project website creation and updates –

<http://www.cityofmadison.com/EastBadgerMillWatershed>



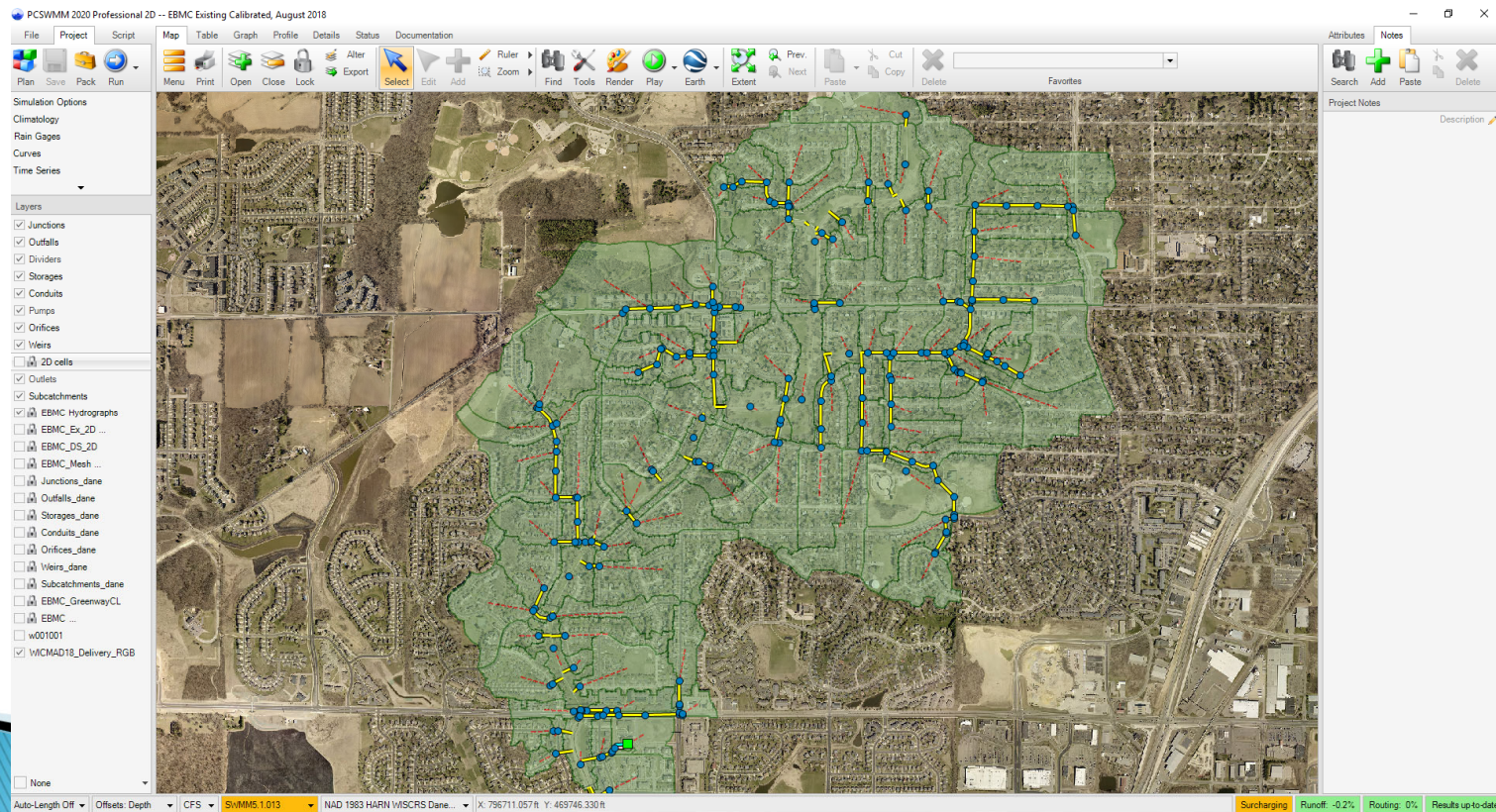
# Progress To Date

- Media – television, radio, Facebook, Twitter, Podcast
  - Coverage about watershed studies as a whole on Channels 3, 27, 15, State Journal, Cap Times
  - Flooding awareness, education posts, photos and videos from focus groups on social media
  - Two podcast episodes on Everyday Engineering: Historic Flooding, Watershed studies



# Progress To Date

## ► Existing Conditions Model Construction



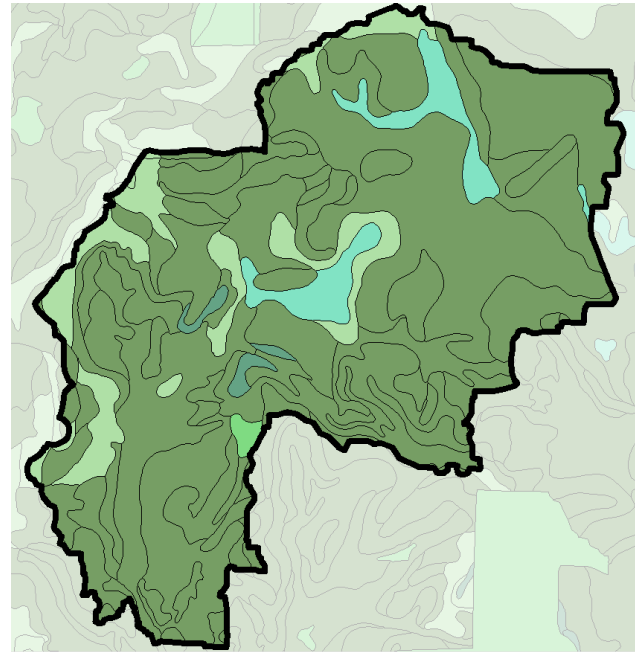
# Progress To Date

- ▶ Existing Conditions Model Calibration
  - Detailed Assessment of Land Use and Soils in the Watershed



Total Watershed Area  
1,297 acres

Total Impervious  
414 acres (32%)



Hydrologic Soil Group  
↓ Texture  
A ~ Sandy (4.0–1.0 in/hr)  
B ~ Silty (2.0–0.5 in/hr)  
C ~ Clayey (1.0–0.2 in/hr)  
D ~ Clayey (0.5–0.1 in/hr)  
↑  
Base Infiltration Rate

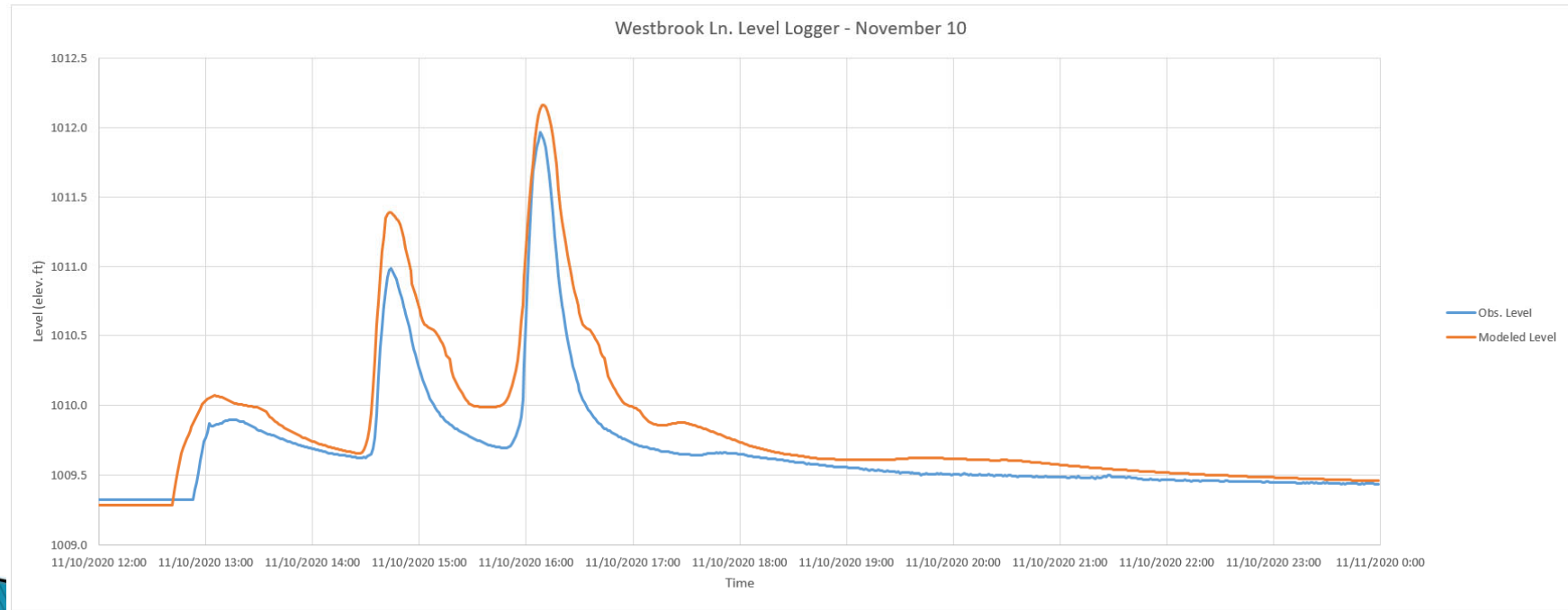
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# Progress To Date

*Calibration is a process of comparing the model results to monitored results and making changes so the model matches more closely*

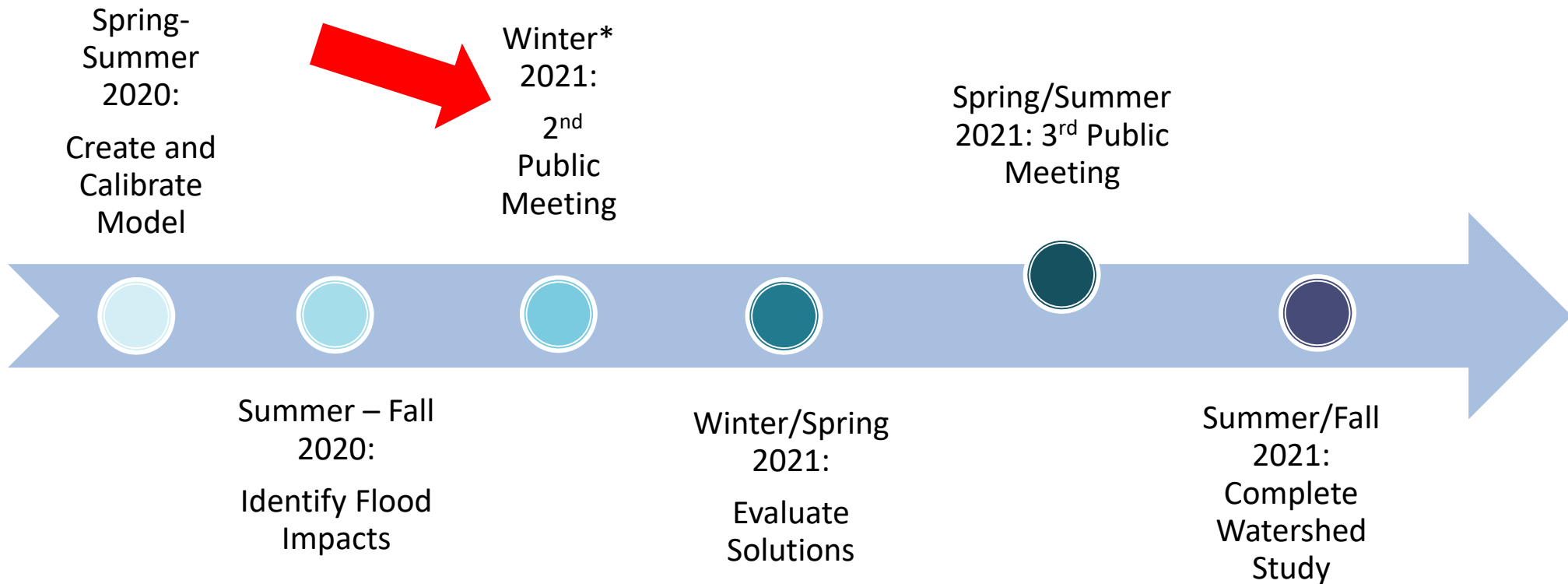
- ▶ Existing Conditions Model Calibration
  - Monitoring equipment: Level Loggers, Flow Meters, Rain Gauges



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# Where we are in study process



\*Schedule delayed due to COVID-19

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# Tonight's Meeting

- ▶ Show our progress to date
- ▶ Review maps in Focus Groups (Zoom Breakout Rooms) following presentation Q&A

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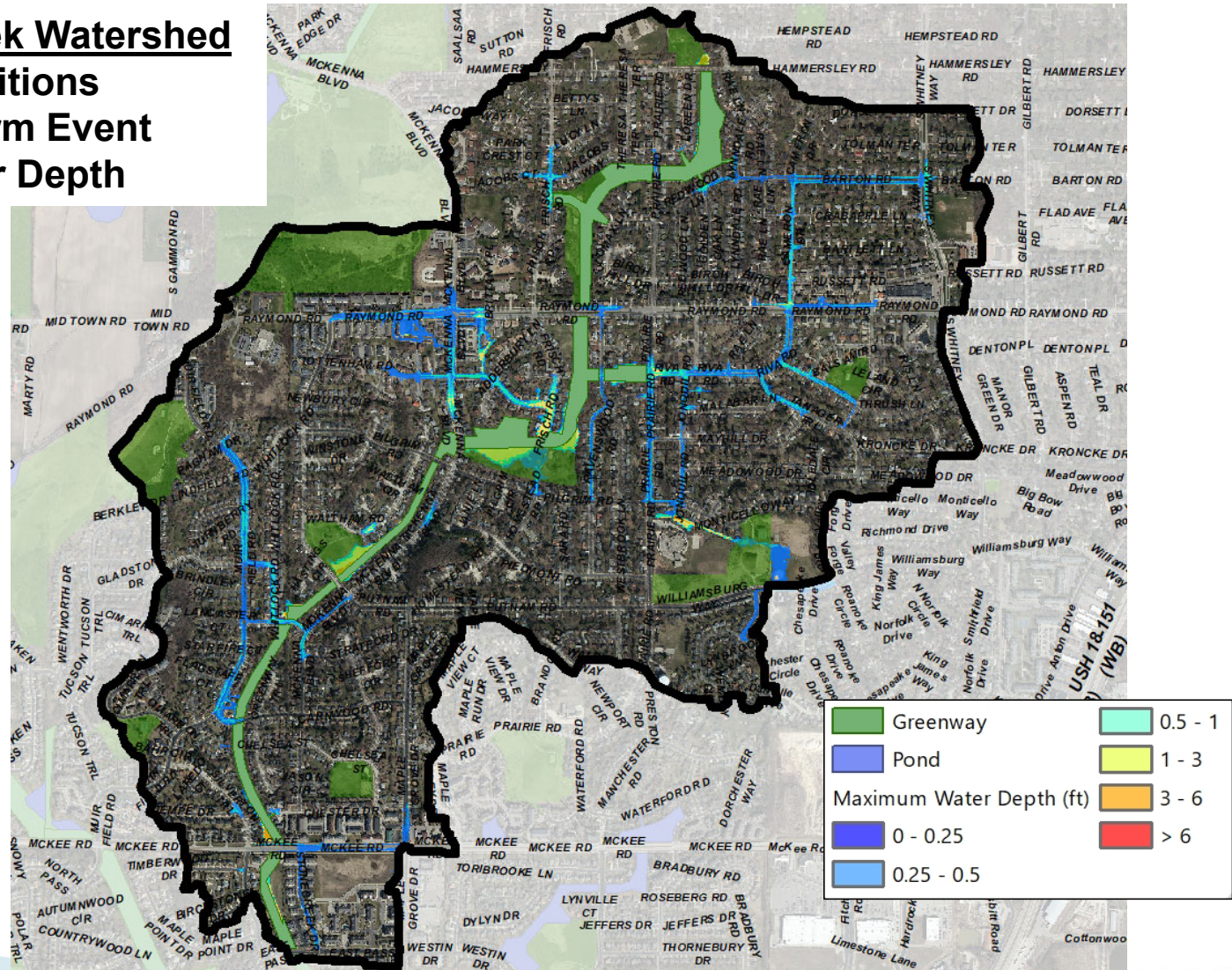


# Draft Flood Inundation Mapping

- ▶ The following slide shows the map from a model simulation of a rain event that has a 10% chance of happening each year
- ▶ The 10% chance storm can be:
  - 1.5 inches in 30 minutes
  - 1.7 inches in 1 hour
  - 3.1 inches in 12 hours
  - 4.1 inches in 24 hours
- ▶ A storm like this occurred in October 2019

## East Badger Mill Creek Watershed

Existing Conditions  
10% Chance Storm Event  
Maximum Water Depth



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# Next Steps

## ➤ Identify Problem Areas

### **City of Madison Flood Mitigation Goals**

1. No home or business will be flooded during the 100-year design storm.
2. Eliminate flooding from the storm sewer system for up to the 10-year design storm; all water shall be contained within the pipes and structures (exception: low points).
3. Allow no more than 0.5 feet of water above storm sewer inlet rim at inlet-restricted low points for up to the 10-year design storm.
4. Centerline of street to remain passable during 25-year design storm with no more than 0.2 feet of water at the centerline.
5. Enclosed depressions to be served to the 100-year design storm (which can include safe overland flow within street, easements, greenways or other public lands).
6. Greenway crossings at streets to be served to the 100-year design storm.
7. Provide flooding solutions that do not negatively impact downstream properties.

# Next Steps

- Identify Problem Areas
- Evaluate Alternative Solutions
  - Green Infrastructure
  - Grey Infrastructure
  - Combination
- PIM #3
- Final Report
- Begin Implementing Solutions



# Watershed Study Limitations

- ▶ Utilizing computer models for analysis (computer models have inherent limitations, require assumptions, and are for one specific set of circumstances)
- ▶ Retrofitting infrastructure takes a lot of time and money
- ▶ Not all problems can be solved
- ▶ Repairs are not always easy, popular, or inexpensive
- ▶ Best engineering solution may not be the one chosen
- ▶ Property owners will need to create solutions too
- ▶ Solutions will need broad community cooperation
- ▶ Groundwater problems not easily addressed by infrastructure

# Contact Information & Resources

- Project Manager: Matt Allie, [mallie@cityofmadison.com](mailto:mallie@cityofmadison.com)
- Public Information Officer: Hannah Mohelnitzky, [hmohelnitzky@cityofmadison.com](mailto:hmohelnitzky@cityofmadison.com)
- Project Webpage: <https://www.cityofmadison.com/engineering/projects/east-badger-mill-creek-watershed-study>
  - Sign-up for project email updates on the website
  - Report flooding, past or current on the Report Flooding form
- New Flooding Website: [www.cityofmadison.com/flooding](http://www.cityofmadison.com/flooding)
- Everyday Engineering Podcast
- Facebook – City of Madison Engineering
- Twitter – @MadisonEngr



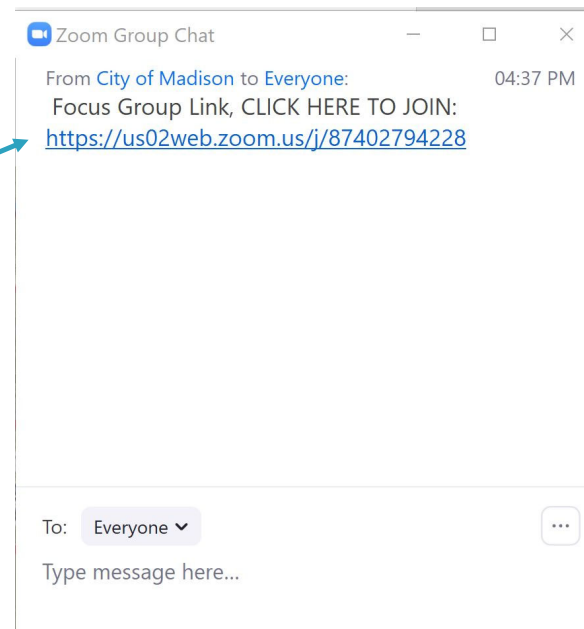
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# Focus Groups – Zoom Breakout Rooms

## ▶ Join the Zoom Breakout Room Session

- Open the Zoom Chat box (if not already open)
- Click on Link provided in the Zoom Group Chat box
- A message will pop-up that says “Do you want to leave this meeting?”
- Click “Yes”
- Join Meeting
- City staff will meet you in the new virtual meeting room



# Breakout Groups

1. Barton-Lynndale & Cameron-Russett
2. Frisch-Theresa
3. Lancaster-Carnwood & McKee-Silverton
4. Pilgrim-Monticello & Riva-Balsam
5. Tottenham-McKenna

