



Stricker's / Mendota Watershed Study Public Information Meeting No. 2

by City of Madison Engineering Division
March 9, 2020

6:00 – 6:15	Welcome
6:15 – 6:45	Presentation
6:45 – 7:00	Presentation Q & A
7:00 – 8:00	Small Group/Focus Group Discussions



Evening Overview

- ▶ Welcome (Hannah Mohelnitzky, City of Madison)
- ▶ Presentation (Jim Bachhuber, Brown and Caldwell)
- ▶ Q&A (facilitated by Hannah Mohelnitzky, City of Madison)
- ▶ Wrap Up (Hannah Mohelnitzky, City of Madison)
- ▶ Breakout to Small Groups (City of Madison and Brown and Caldwell staff)



MAP DISCLAIMER

THE INTENT OF THE FLOOD ZONE MAPS ARE TO ASSIST INDIVIDUALS IN QUICKLY FINDING GENERAL FLOOD ZONE INFORMATION FOR THE INCORPORATED AND UNINCORPORATED AREAS OF THE CITY OF MADISON. FLOOD ZONE MAPS DO NOT NECESSARILY IDENTIFY ALL AREAS SUBJECT TO FLOODING. THE CITY OF MADISON PROVIDES THE MAPS AS AN ADVISORY TOOL FOR FLOOD HAZARD AWARENESS. INDIVIDUALS SHOULD NOT USE FLOOD ZONE MAPS AS THEIR PRIMARY RESOURCE FOR MAKING OFFICIAL FLOOD ZONE DETERMINATIONS FOR INSURANCE, LENDING, OR OTHER RELATED PURPOSES. THIS IS NOT AN OFFICIAL FLOOD MAP.

THE CITY OF MADISON ASSUMES NO LIABILITY FOR ANY ERRORS, OMISSIONS, INACCURACIES, COMPLETENESS OR USEFULNESS OF THE INFORMATION PROVIDED REGARDLESS OF THE CAUSE OR FOR ANY DECISION MADE, ACTION TAKEN, OR ACTION NOT TAKEN BY THE USER IN RELIANCE UPON ANY OF THE MAPS OR INFORMATION PROVIDED.

CITY OF **MADISON**

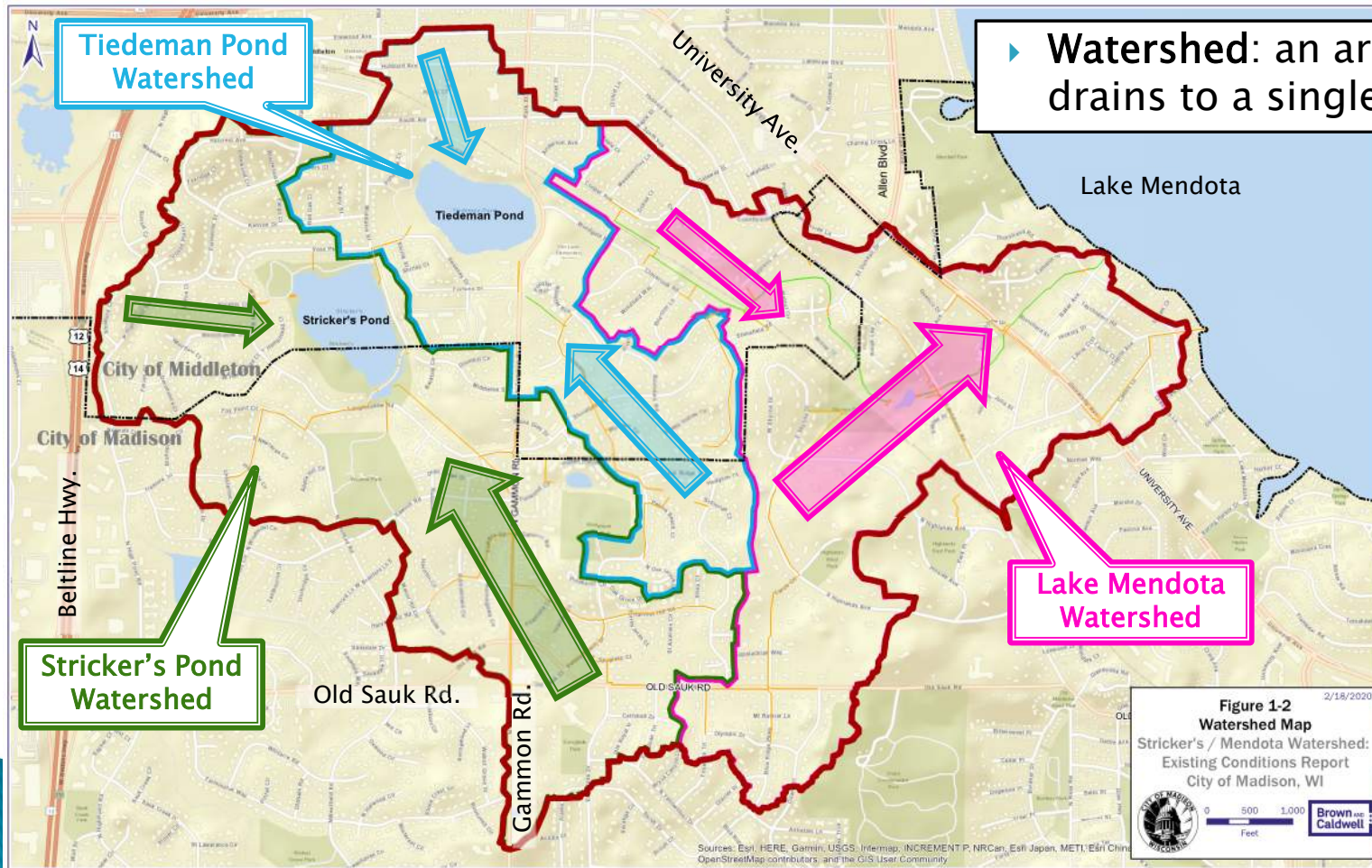


Presentation Overview

- ▶ Definitions of Terms
- ▶ Outreach to Date
- ▶ Project location
- ▶ Building the Stormwater Model
- ▶ Results of Existing Conditions Model
- ▶ Next steps
- ▶ Challenges to Implementation
- ▶ Break Out to Small Groups (Focus Groups)



Definitions: Watershed



▶ **Watershed:** an area of land that drains to a single location

Stricker's Pond /
Lake Mendota
Project Area

MADISON



Definitions: Stormwater Runoff

- ▶ **Stormwater runoff:** rainwater that does not soak into the ground . . . Too much, too fast causes flooding



Definitions: Stormwater Inlet

- ▶ Stormwater inlets: grates in the ground that take in stormwater runoff; connected to underground pipes



. . . many shapes and sizes

CITY OF **MADISON**



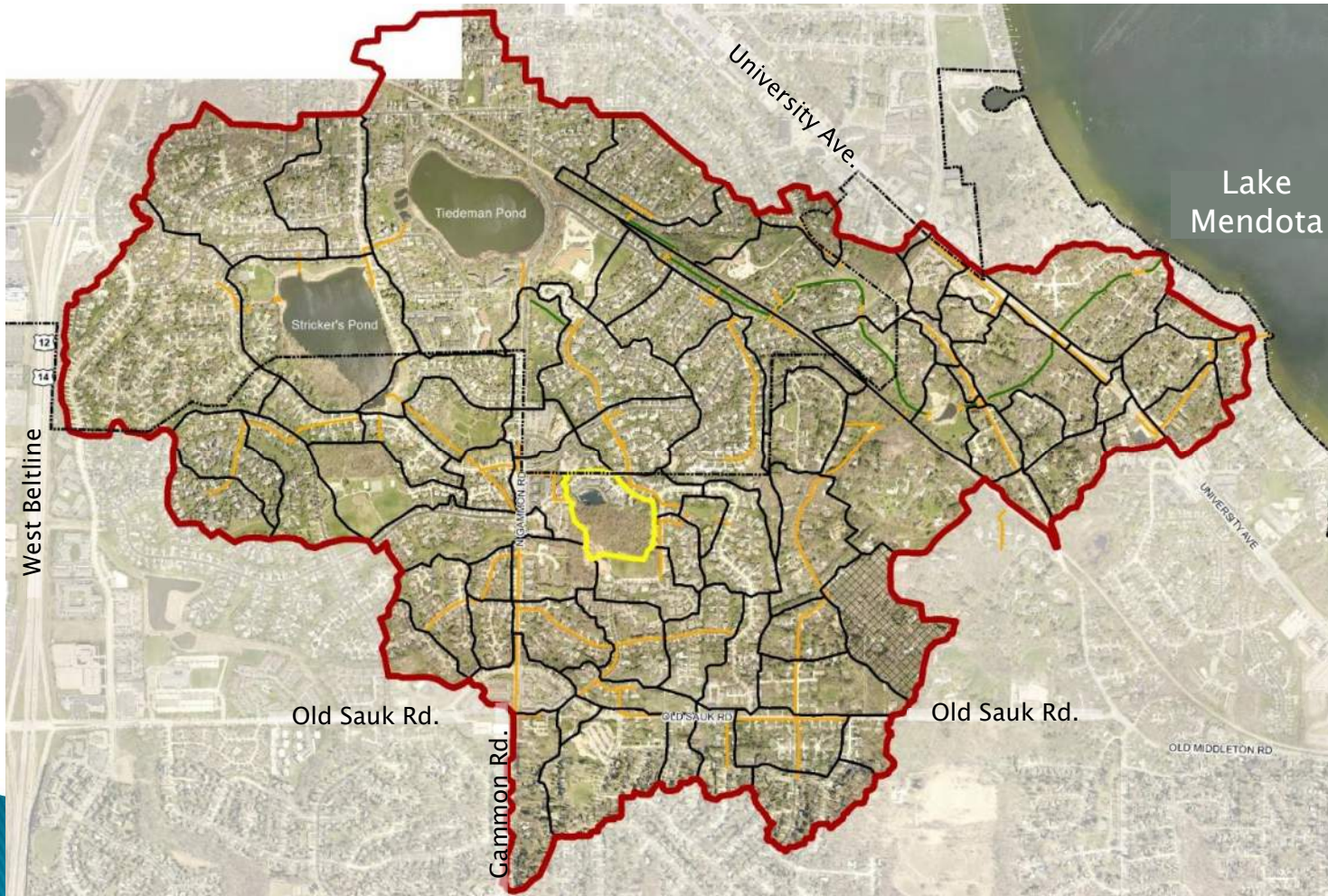
Definitions: Detention Ponds

- ▶ **Detention ponds:** constructed ponds designed to hold stormwater runoff to improve water quality and/or help prevent flooding



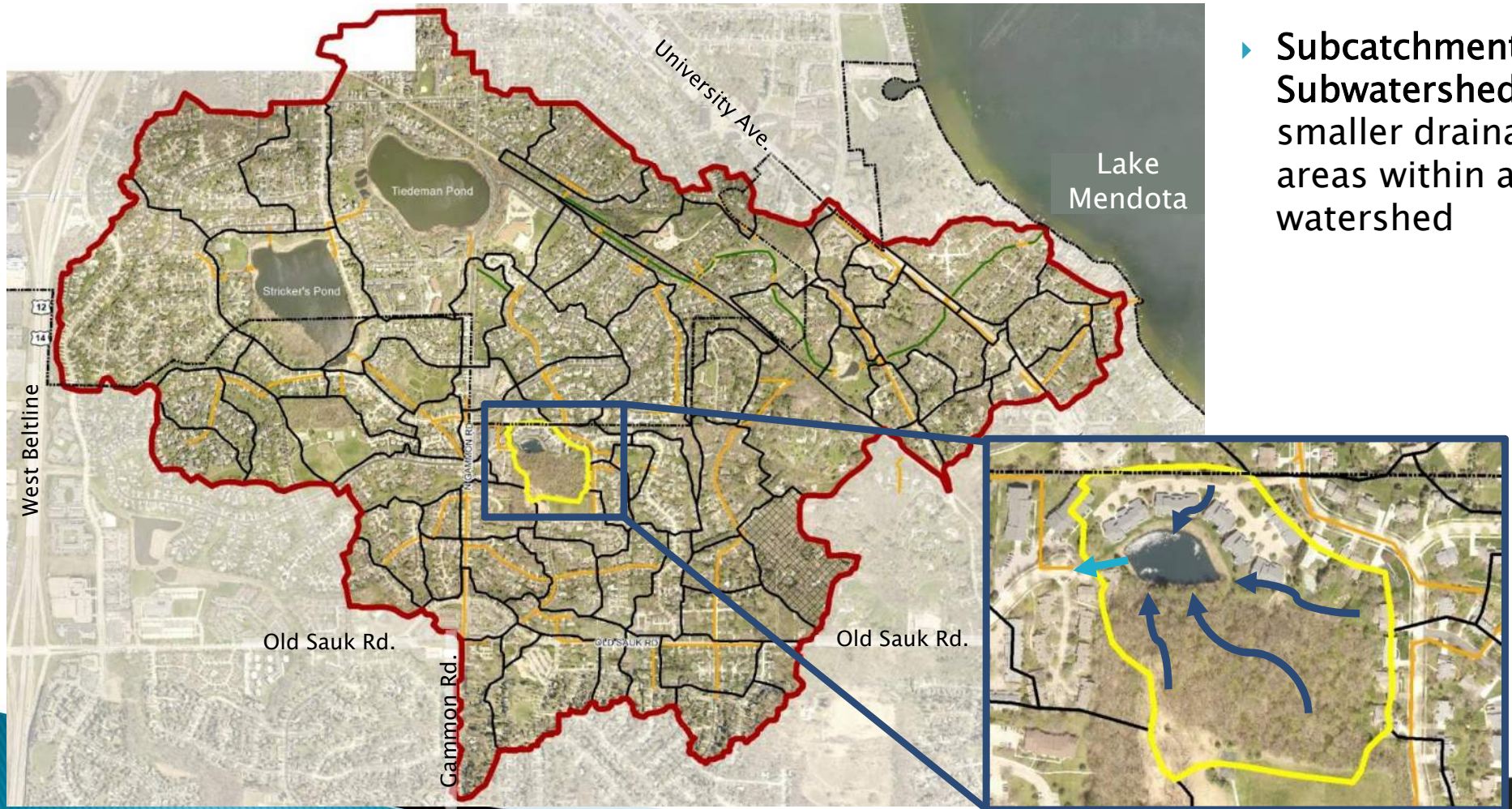
Pondwood Detention Pond
(south of Hidden Hollow Tr.)

Definitions: Subcatchments or Subwatersheds



- ▶ Subcatchments or Subwatersheds: smaller drainage areas within a watershed

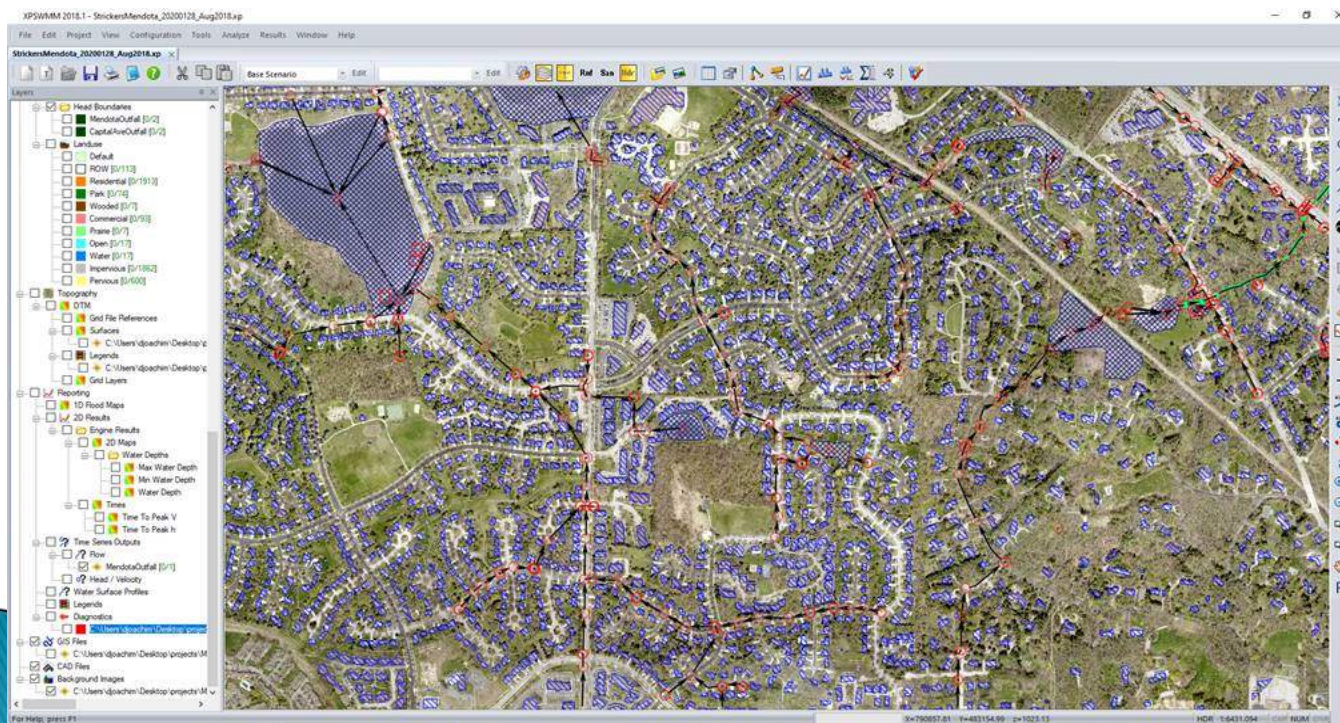
Definitions: Subcatchments or Subwatersheds



- ▶ **Subcatchments or Subwatersheds:** smaller drainage areas within a watershed

Definitions: Hydrology, Hydraulic, & Model

- ▶ **Hydrology:** runoff moving over the ground before reaching a channel or inlet
- ▶ **Hydraulic:** runoff moving in a channel or pipe
- ▶ **Model:** computer software that simulates rainfall, hydrology, and hydraulics.



Computer Model
of an area of
Stricker's Pond /
Lake Mendota
Watershed

TY OF **MADISON**

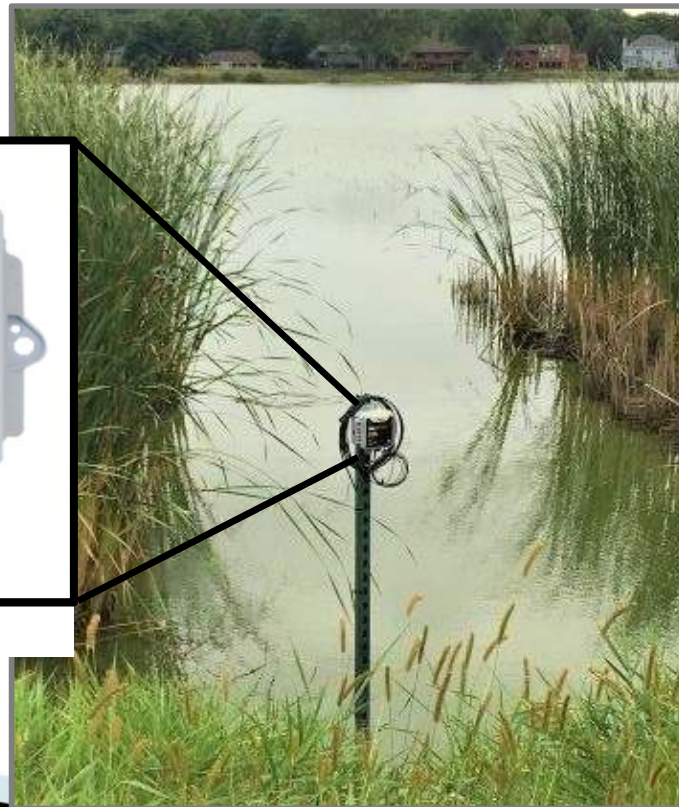


Definitions: Data Logger

- ▶ **Level loggers:** monitoring equipment used to measure water level in a pond, channel, storm sewer, etc.



Courtesy www.trimblewater.com

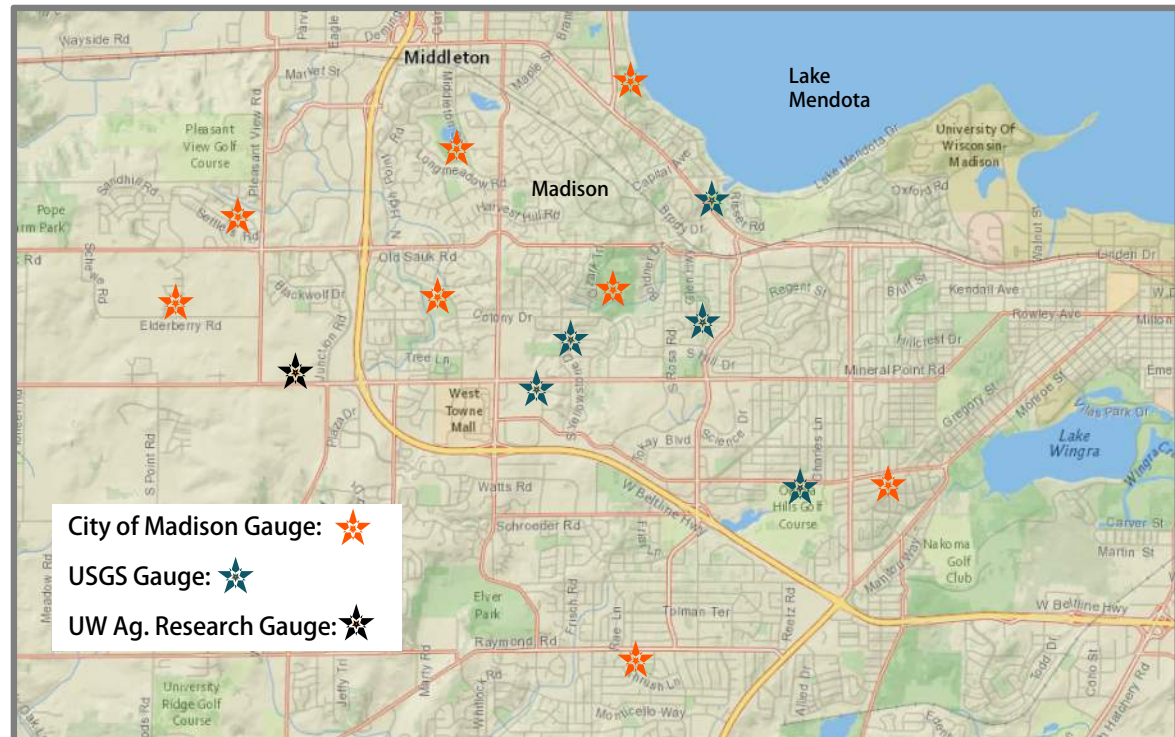


CITY OF **MADISON**



Definitions: Rain Gauge

- ▶ Rain gauges: measure depth and time of rain event



CITY OF MADISON



Outreach To Date

- Public Information
 - Public Meeting #1: April, 2019



Outreach To Date

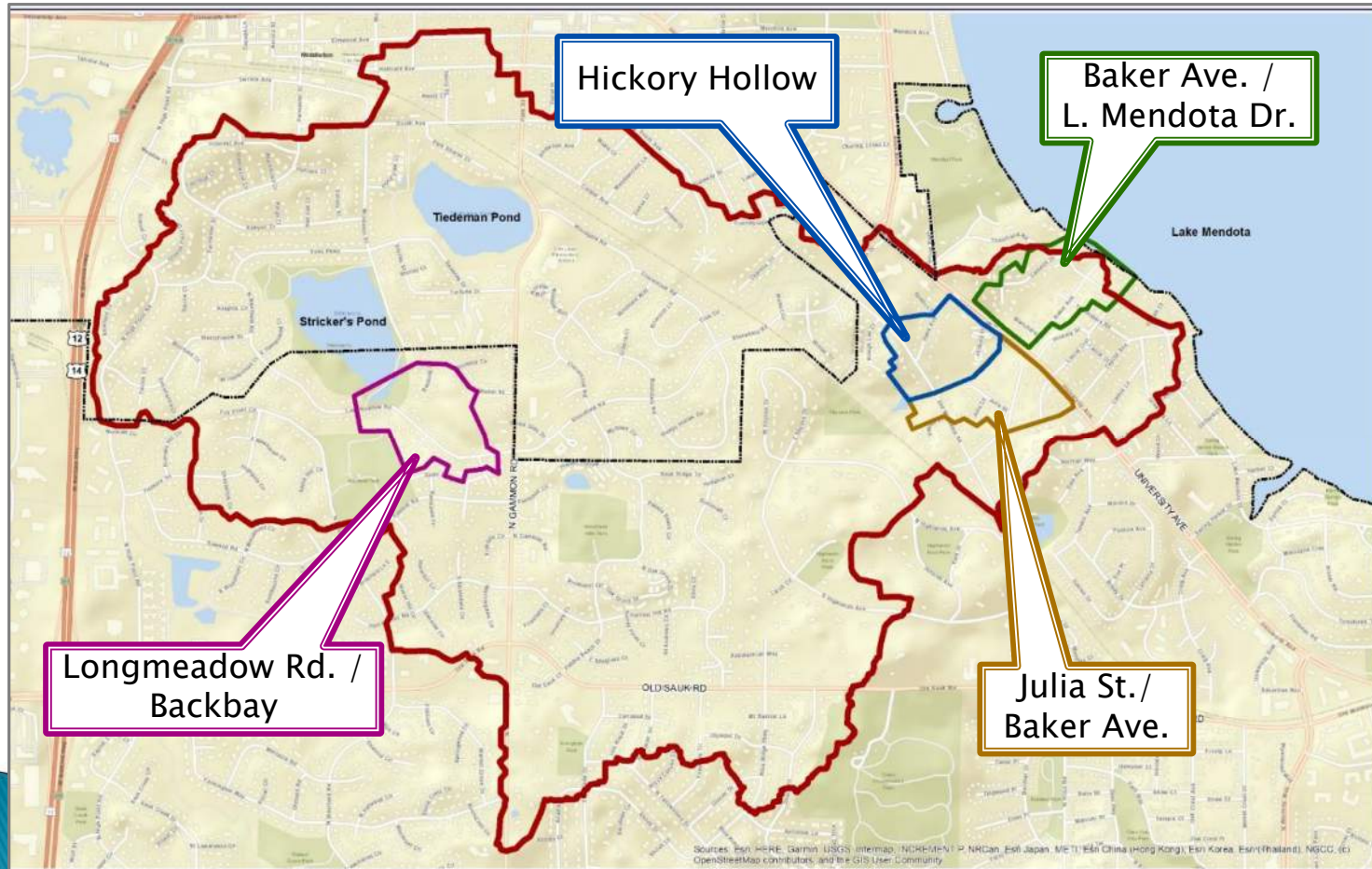
- Public Information
 - Public Meeting #1: April, 2019
 - Focus Groups:
 - 4 Meetings: Aug. – Sept. 2019



CITY OF **MADISON**



Outreach To Date (Focus Groups)



Outreach To Date

➤ Public Information

- Public Meeting #1: April, 2019
- Focus Groups:
 - 4 Meetings: Aug. – Sept. 2019
- Project website / project updates

<https://www.cityofmadison.com/engineering/projects/strickers-mendota-watershed-study>

The screenshot shows the City of Madison Engineering website page for the Strickers/Mendota Watershed Study. The page includes a navigation menu with links for Home, Bike, Road Construction, City Facilities, Sewer/Storm, and Resources. The main content area features a map of the watershed area, project details, and contact information.

City of Madison Engineering
Robert F. Phillips, P.E., City Engineer

Home Bike Road Construction City Facilities Sewer/Storm Resources

City of Madison Engineering Projects Strickers/Mendota Watershed Study

Strickers/Mendota Watershed Study

Map Satellite

Project Details

- Project Type: Sewer/Storm
- Location(s): 834 Pebble Beach Dr, Madison, WI 53717
- Area: West
- Aldermanic District(s): District 10
- Estimated Schedule: 03/11/2019 to 12/31/2020
- Project Status: Planning

Project Contact:

Lauren Striegli
608-266-4004
lstriegli@cityofmadison.com

Janet Schmidt
608-261-0688
jtschmidt@cityofmadison.com

Active Project List

Subscribe to Email List:

Subscribe to the Strickers/Mendota Watershed Study email list

Email: * required

Subscribe

Strickers/Mendota

Area = 1457 acres

The Strickers/Mendota watershed drains to Lake Mendota.

CITY OF MADISON



Outreach To Date

- Media – television, radio, Facebook, Twitter, Podcast
 - Coverage about Watershed studies on local TV, State Journal, and 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

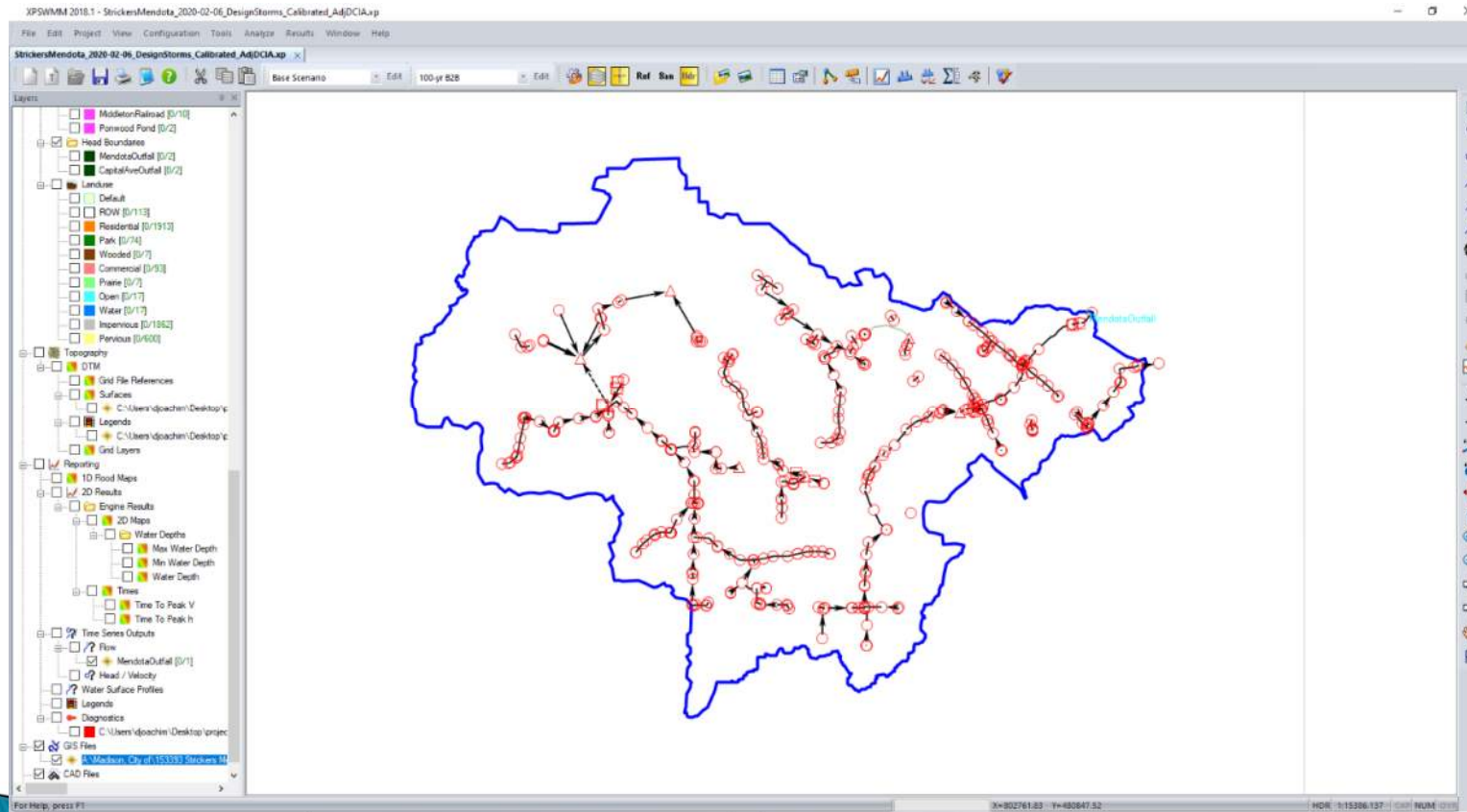


Speaking of Outreach...

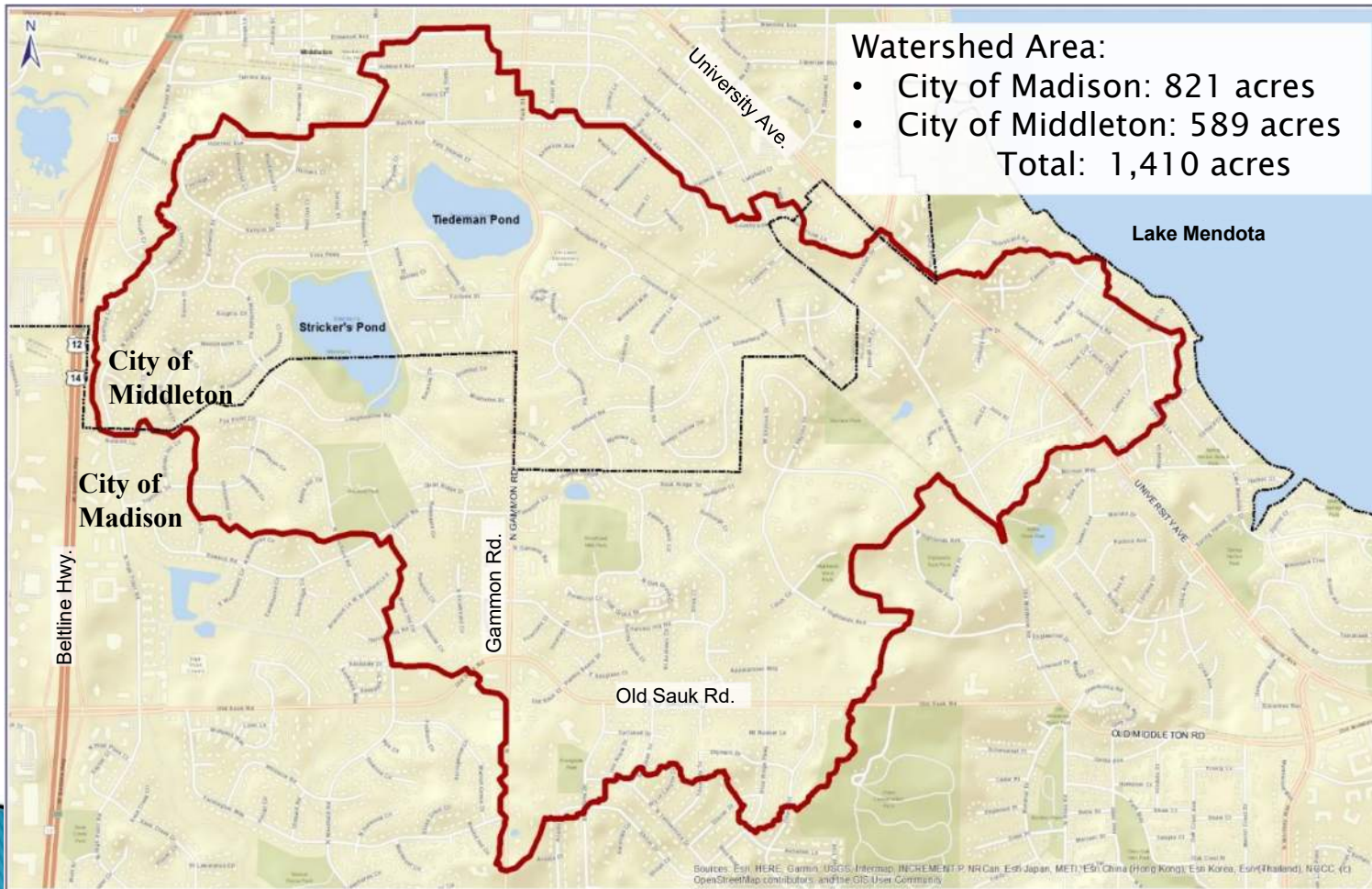
... Please fill out and turn in “Question Cards”



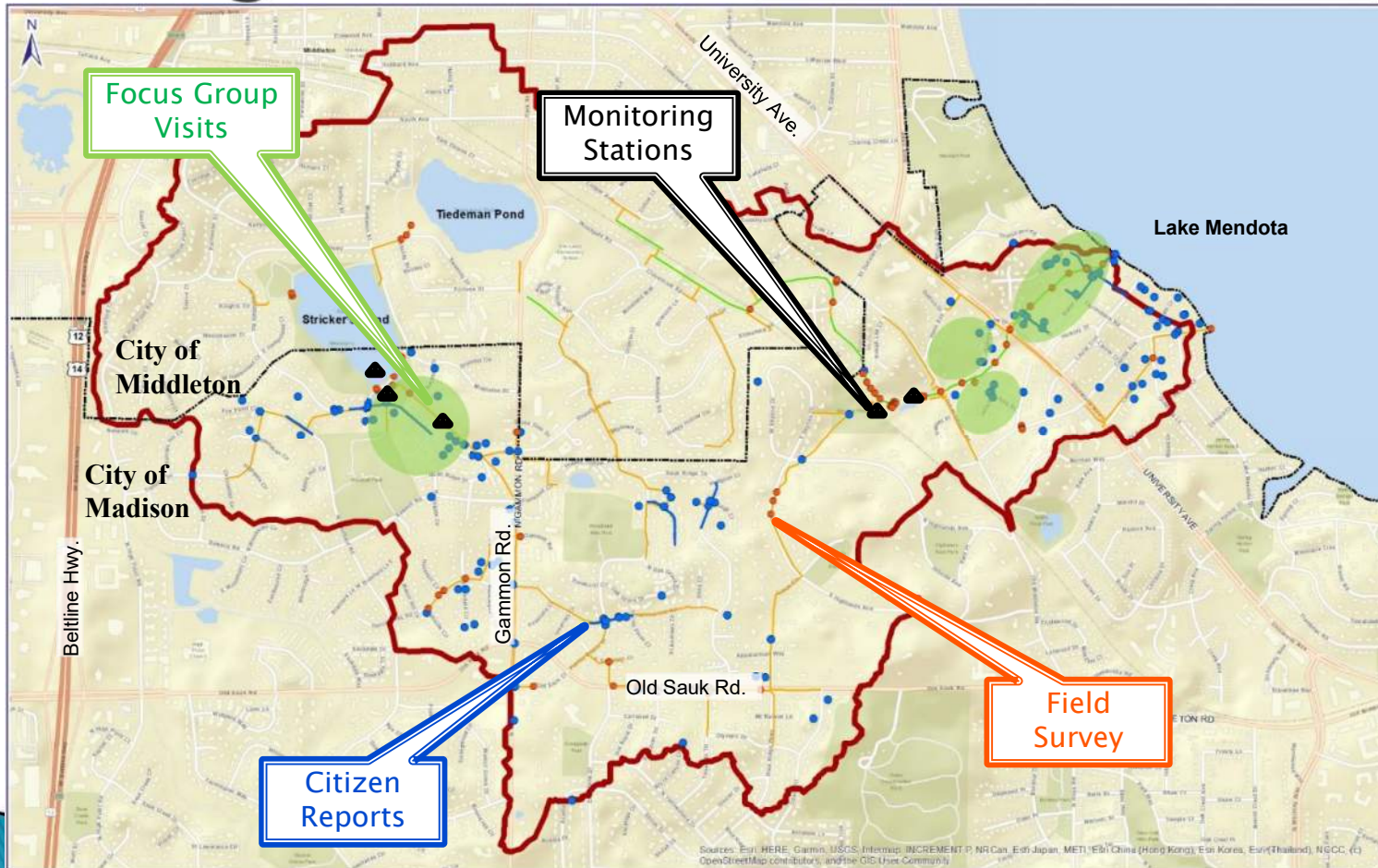
Existing Conditions Model Construction



Building the Model: Data Collection



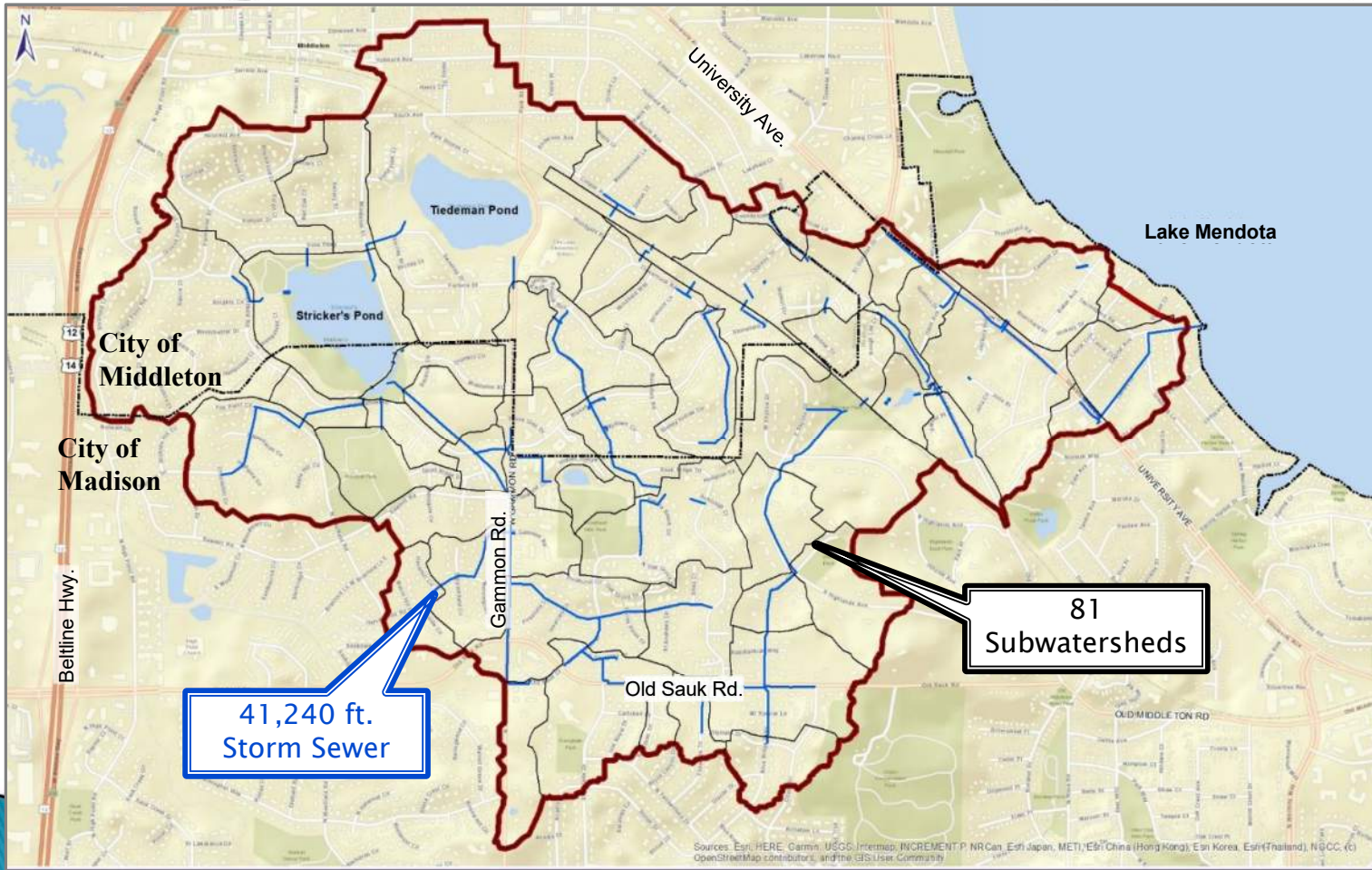
Building the Model: Data Collection



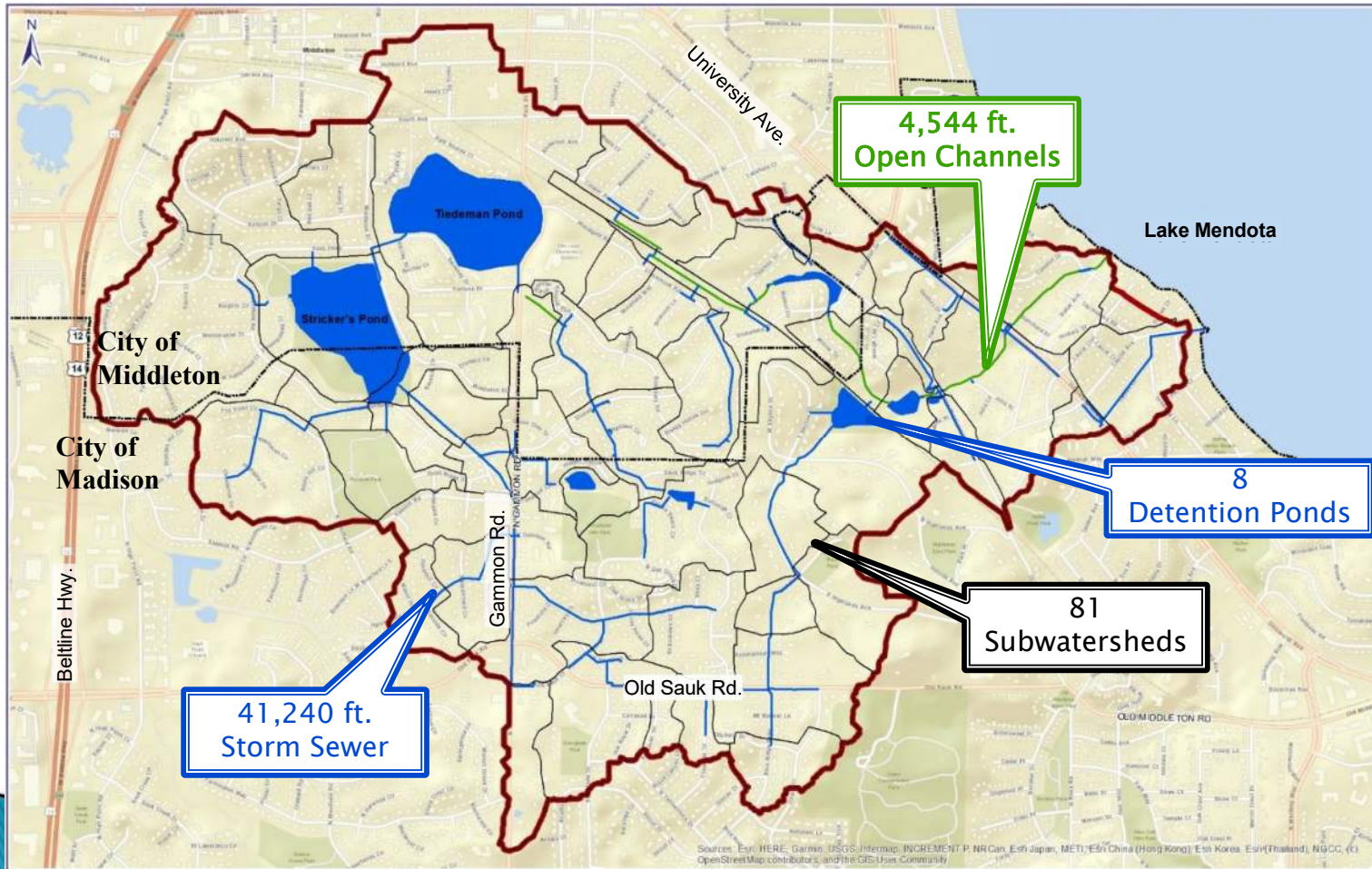
CITY OF MADISON



Building the Model: Data Collection



Building the Model: Data Collection



Building the Model: Stormwater System

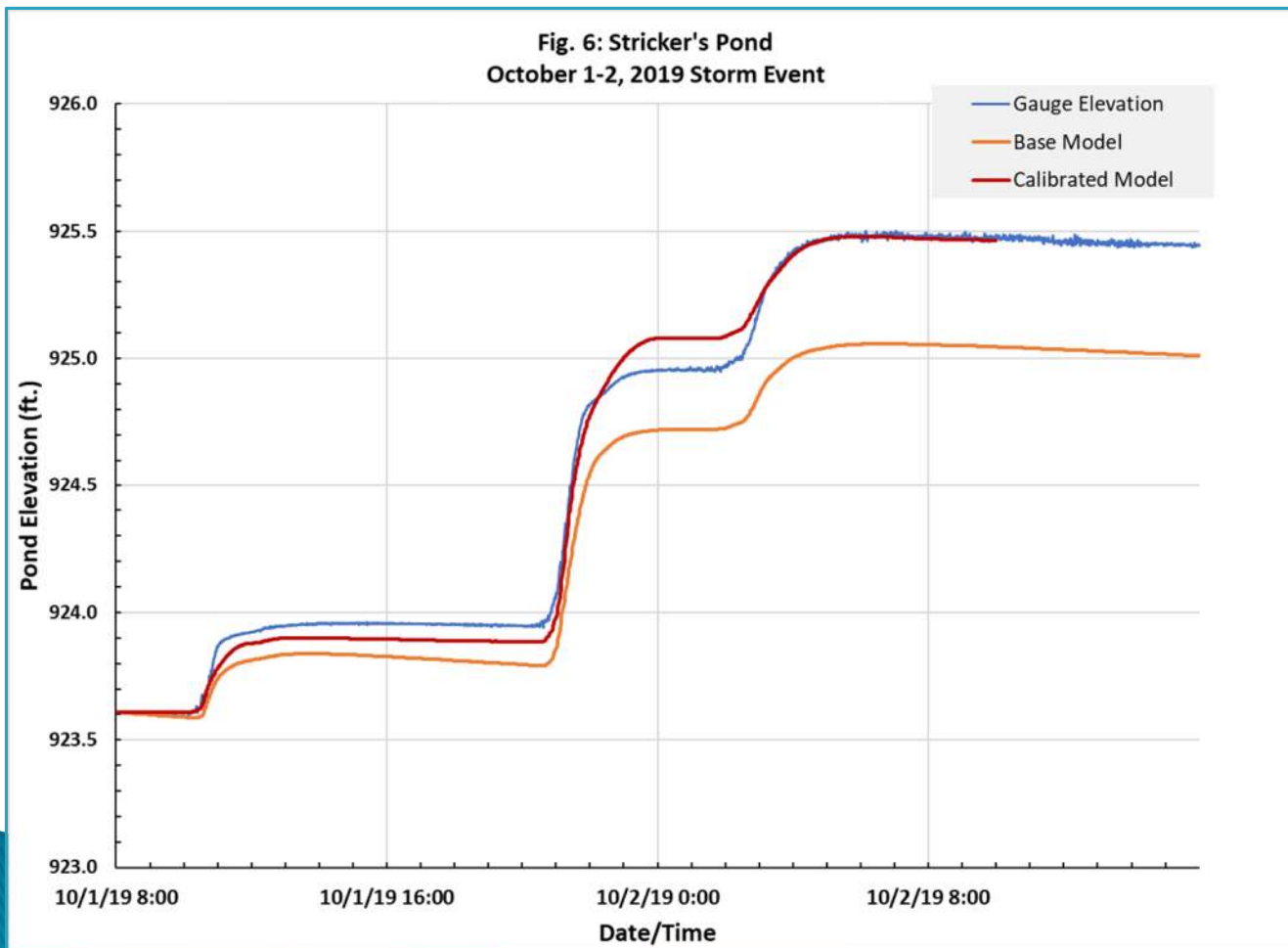
Item	Quantity
Watershed Area	C. of Madison: 821 acres C. of Middleton: 589 acres
Number of Subwatersheds	81
Storm sewer pipes in Model	41,240 ft.
Open channels in Model	4,544 ft.
Detention Ponds in Model (#)	8*

* Stricker's Pond and Tiedeman Pond modeled, but not as "Detention Ponds"

Building the Model: Groundwater Considerations

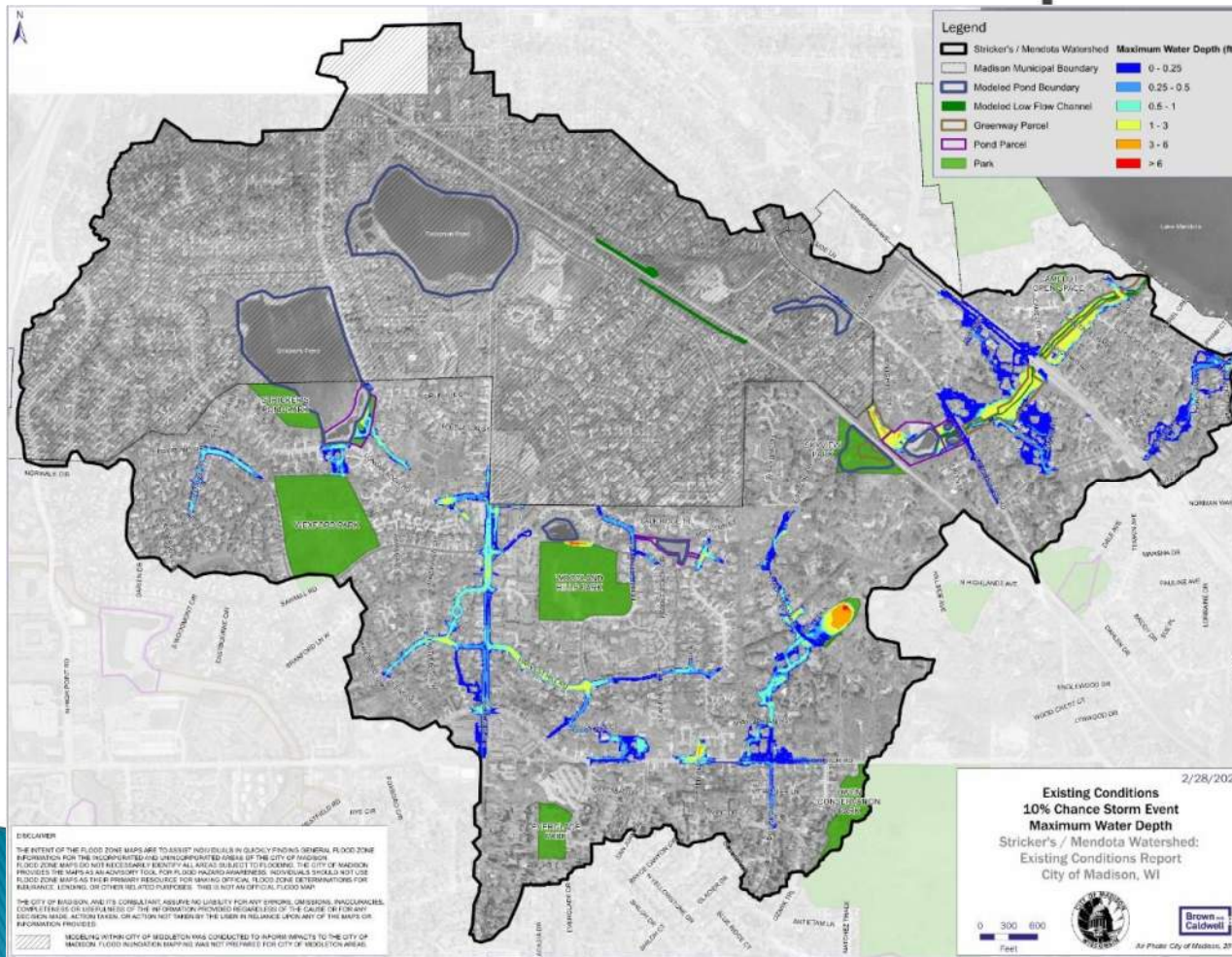
- ▶ Ample evidence that groundwater levels have increased and cause basement / sump pump problems.
- ▶ Model accounts for several surface water/groundwater interactions
 - Type of soil (sandy, silty, clayey, wetland, etc.)
 - Soil wetness before storms (antecedent moisture conditions)
 - Depressions / ponding areas
 - Surface infiltration
- ▶ Groundwater does not appear to have substantial effect on large flooding events
 - On a watershed scale, groundwater flow appears minimal during non-runoff periods.
 - Sump pump flows are small compared to storm sewer pipe capacity.
 - High groundwater levels result from long term rain, not single large storms.
 - The City's efforts for this project are on large storm flood mitigation.
 - Model will not resolve sump pump problems.

Model Results: Calibration



Calibration compares model results to monitored results and adjusting model parameters

Model Results: Flood Maps



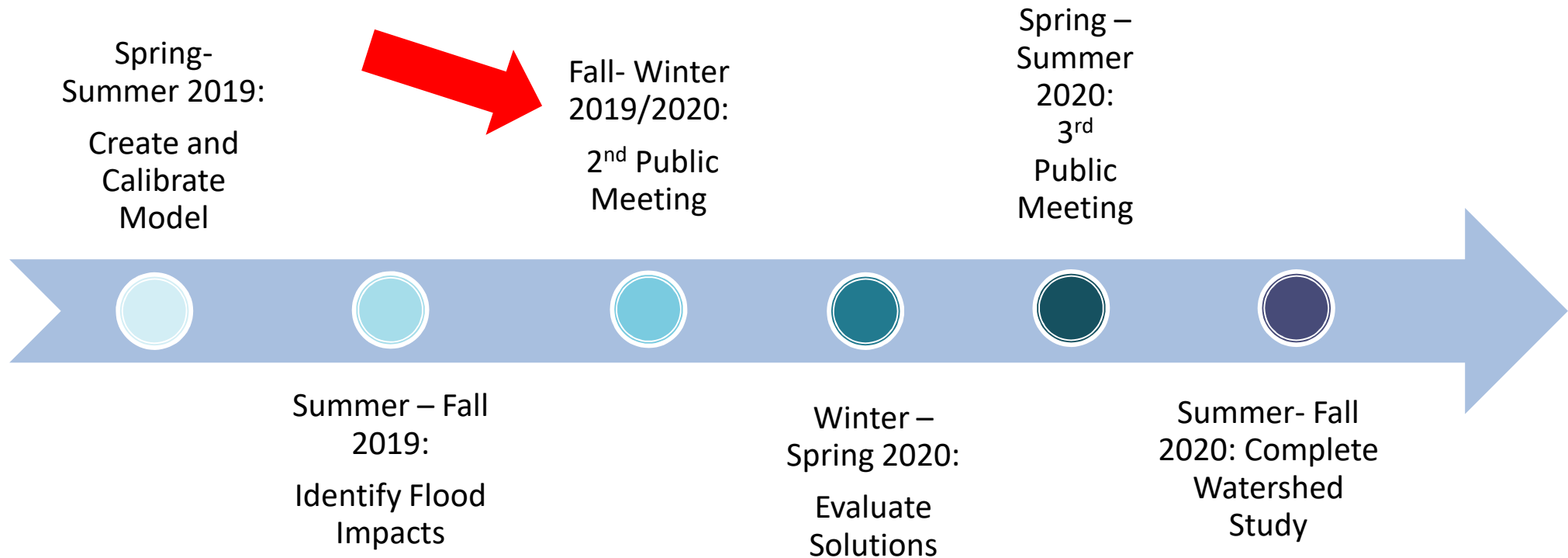
Flood Inundation Mapping

10% Chance Storm (4.1" over 24 hrs.)

CITY OF MADISON



Next Steps



Next Steps

- ▶ Evaluate Proposed Solutions
 - Green Infrastructure
 - Grey Infrastructure
 - Combination
- ▶ Public Information Meeting #3
- ▶ Final Report
- ▶ Begin Implementing Solutions



CITY OF **MADISON**



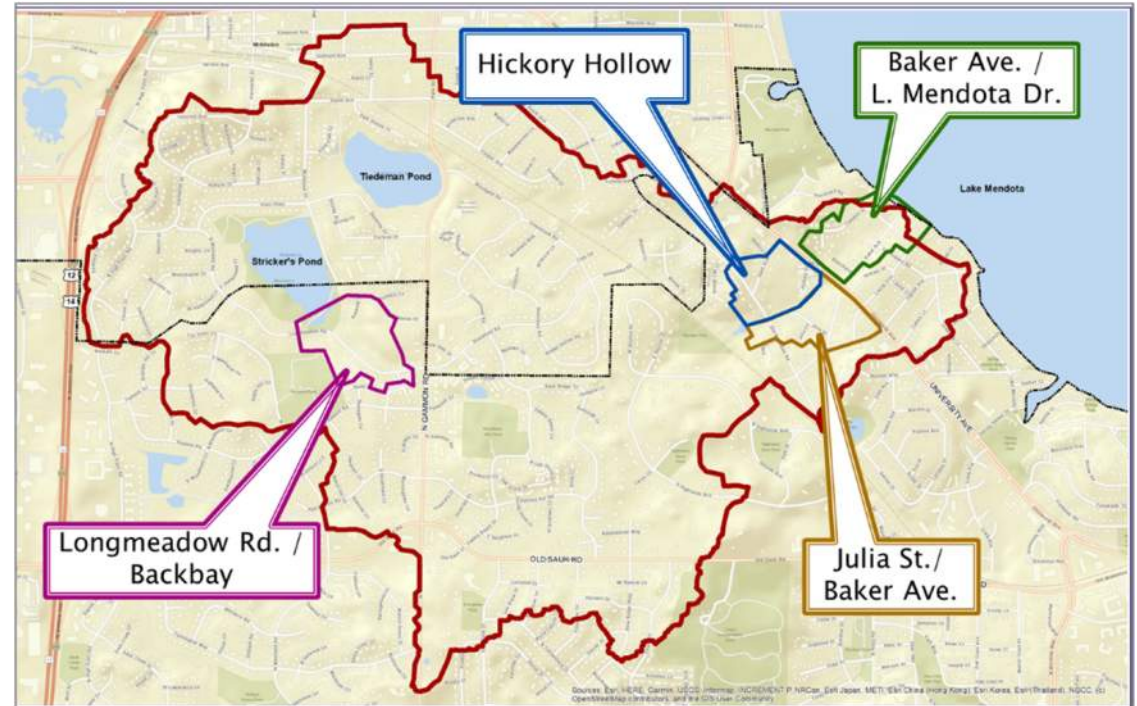
Watershed Study Limitations

- ▶ Computer models have limitations, require assumptions, and represent one specific set of circumstances
- ▶ Retrofitting infrastructure takes time and money
- ▶ Not all problems can be solved
- ▶ Repairs not always easy or popular
- ▶ Best engineering solution may not be selected
- ▶ Property owners are part of the solution
- ▶ Solutions will need broad community cooperation



Remainder of Tonight's Meeting

- ▶ Q&A
 - Staff Response to written audience questions.
- ▶ Focus Group Breakout
- ▶ Locate your group's station
 - Review maps & discuss
 - Provide feedback
 - If your property is not in a Focus Group area:
 - Join an area of interest to you
 - Review overall map



One Last Discussion on Rain Storms

- ▶ Rain storms classified by “chance of occurring in a year”.
- ▶ Probabilities are calculated for rain depth and duration.
- ▶ Example Recent Rain Events*
 - July 21, 2016: 2.41” in 2 hours
(10% chance event)
 - June 16, 2018: 1.54” in 2 hours
(75% chance event)
 - August 20 – 21, 2018: 6.72” in 14 hours
(Less than 1.0% chance event)

* Measured at Weather Underground Camelot Dr station (KWIMADIS87) in Madison, WI.



Contact Information & Resources

- Project Manager: Lauren Striegl, lstriegl@cityofmadison.com, 608-266-4094
- Project Website: <https://www.cityofmadison.com/engineering/projects/strickers-mendota-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
- Everyday Engineering Podcast
- Facebook – City of Madison Engineering
- Twitter – @MadisonEngr



Thank You!

Question Cards

Q&A

CITY OF **MADISON**

