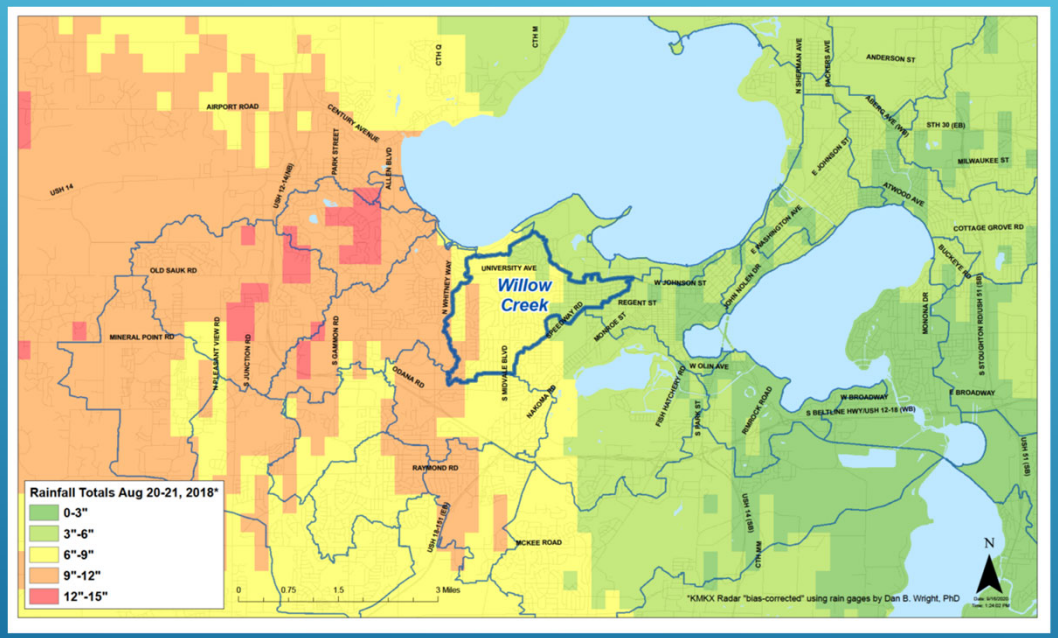
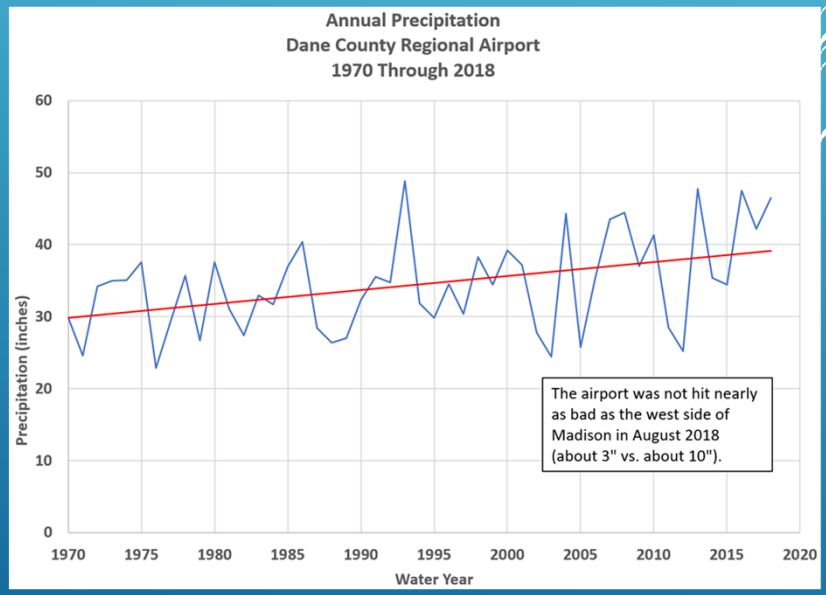
BRIEF OVERVIEW OF WATERSHED STUDY PROGRAM

- Why is the City conducting Studies?
- Scope of Studies
- Other Initiatives
- Using Results
- More Information

WHY ARE WE DOING THE STUDIES?



- 2018 Flooding Had Significant Impacts
- Building Resilience In Our System
- Understanding The Storm Water Conveyance System Holistically



SCOPE OF STUDIES

- Hydrological And Hydraulic Modeling Using SWMM Software
  - Surface Water And Conveyance System Analysis

- Not Included:
  - Groundwater Analysis
  - Stormwater Quality Analysis
  - Full Environmental Reviews

- **IN ORDER TO ADDRESS ALL OF THESE ITEMS IN ONE REPORT WOULD BE TOO TIME CONSUMING AND VERY EXPENSIVE…HOWEVER….**

OTHER RELATED STORMWATER INITIATIVES

- Distributed Green Infrastructure (DGI) Pilot Study In Westmoorland Neighborhood
- DGI "White Paper" On Impacts Of Green Infrastructure On Flood Mitigation
- Revisions To MGO Ch 37 To Add More Requirements To Bolster Resiliency

How Results Play a Part in Future Projects

- Inform Designs On What Is Required To Correct Historical Flooding
- Demonstrates Order Of Implementation Of Projects
- Informs Public And Policy Makers On Realistic Expectations For The System
- Allows For More Thoughtful Decision Making

- **When designing improvements this is one piece of the complex puzzle, along with stormwater quality and environmental reviews that would be completed to come up with thoughtful solutions.**

MORE INFORMATION

- HTTPS://WWW.CITYOFMADISON.COM/FLOODING
- HTTPS://WWW.CITYOFMADISON.COM/FLOODING/CITY-INITIATIVES/WATERSHED-STUDIES
- HTTPS://WWW.CITYOFMADISON.COM/FLOODING/CITY-INITIATIVES/WATERSHED-STUDIES/WATERSHED-STUDY-LEARNING-HUB
- HTTPS://WWW.CITYOFMADISON.COM/ENGINEERING/STORMWATER

East Badger Mill Creek Watershed Study Solutions and Report

City of Madison Engineering Division
Board of Public Works Meeting
May 17, 2023

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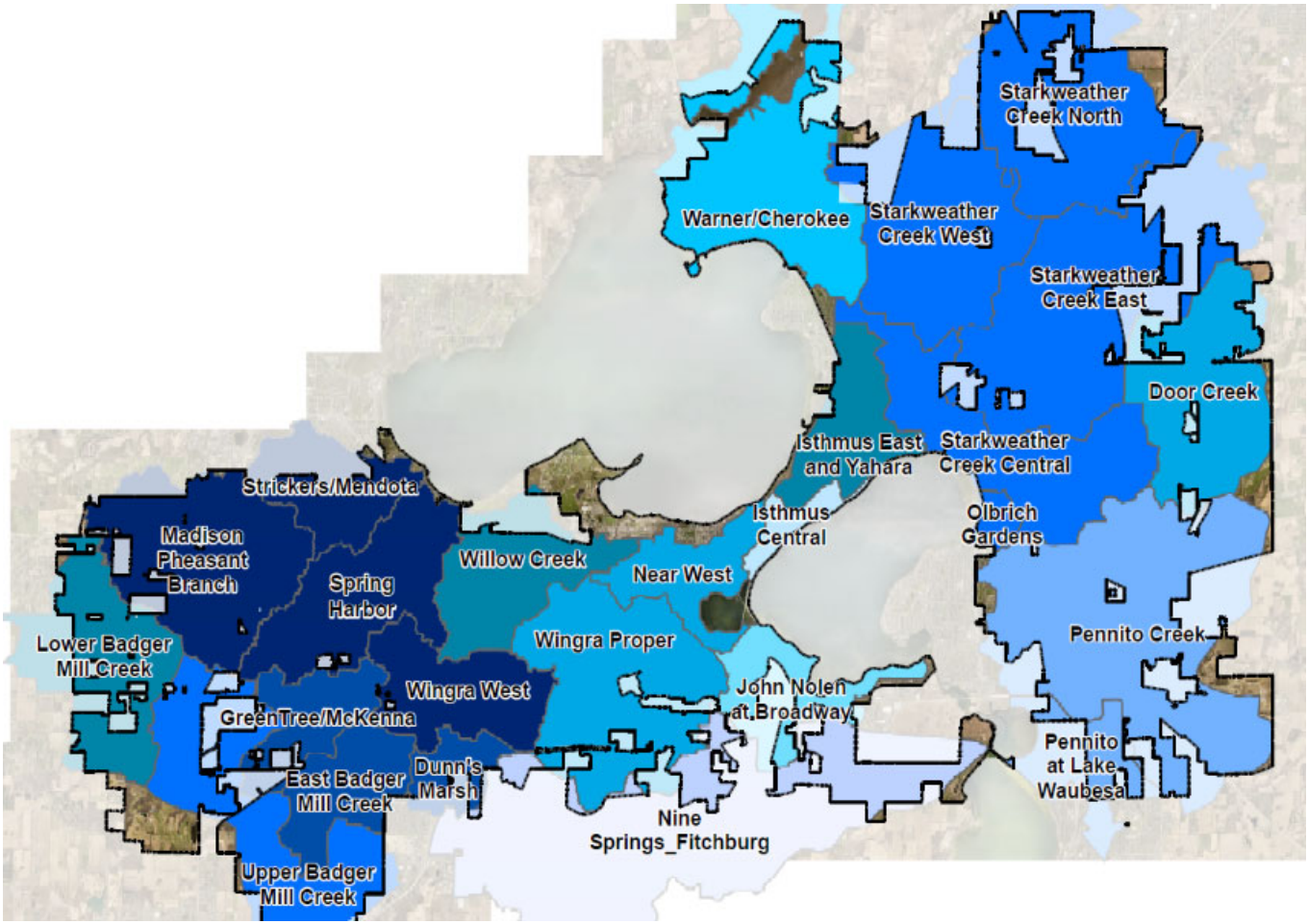
Watershed Study Phasing



Legend

Municipal Boundary

Watershed Study Areas Start Year and Month

- 2019 March
- 2019 July
- 2020 March
- 2021 March
- 2022 March
- 2023 March
- 2024 March
- 2025 March
- 2026 March
- 2027 March

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Schedule

Spring–Summer 2020

Create and Calibrate Model

Fall 2020

Identify Flood Impacts

Winter 2021

*2nd Public Meeting**

Summer 2021 – Summer 2022

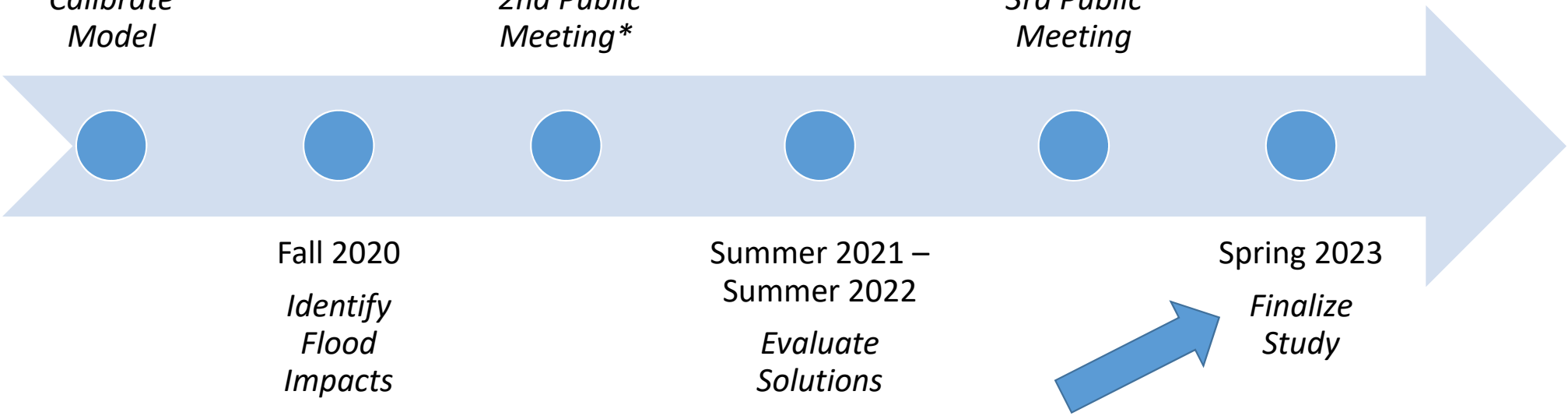
Evaluate Solutions

Winter 2022

3rd Public Meeting

Spring 2023

Finalize Study



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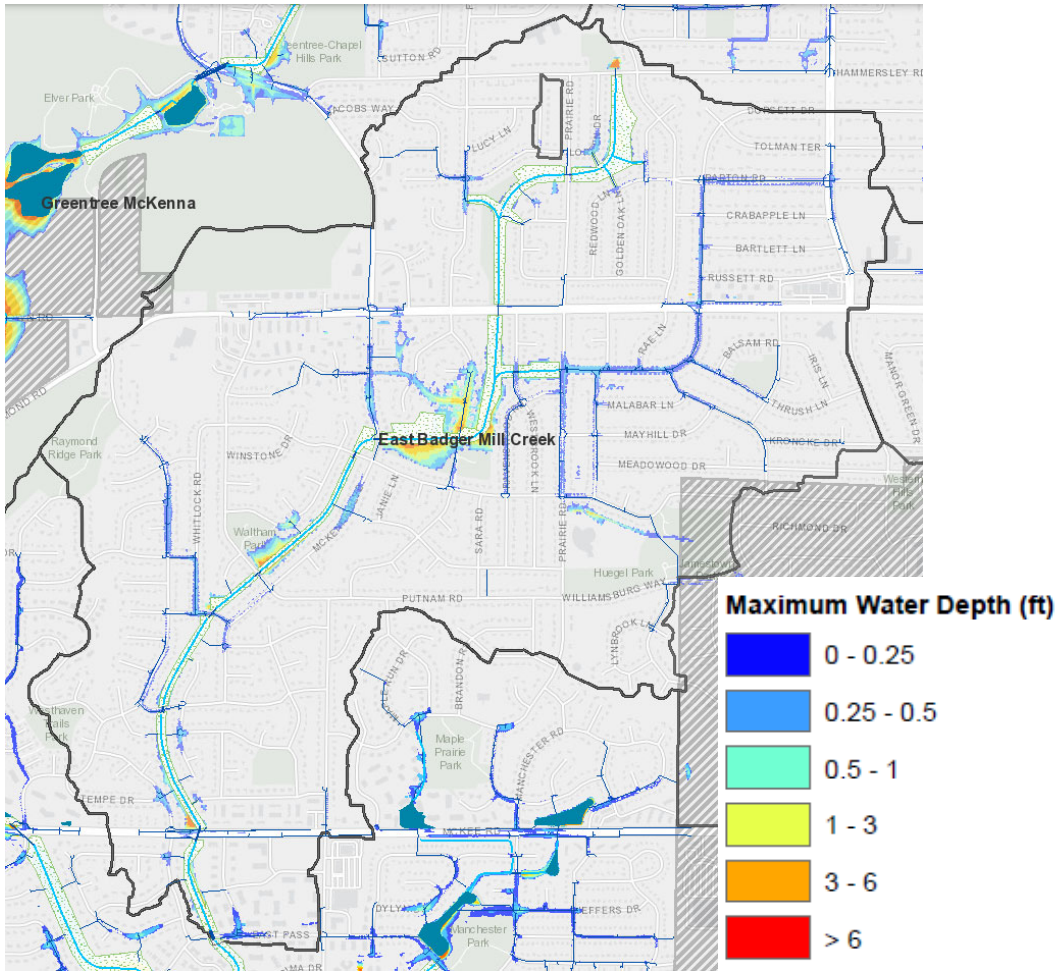
**Presentations from PIM1 (Fall 2019) and PIM 2 can be found on the Watershed Study Website*

Watershed Study Milestones

- PIM 1: 10/29/19
- PIM 2: 1/14/21
- Public Works Improvements: 12/8/22
- PIM 3: 12/13/22
- Report Final Draft Finished: 3/13/23
- Report Public Comment Period: 3/17/23 – 4/15/23
- BPC: 4/19/23
- BPW: 5/17/23
- FINAL REPORT:

https://www.cityofmadison.com/engineering/documents/projects/East_Badger_Mill_Creek_Watershed_Study_Draft_Final_Report.pdf

Existing Conditions 1% Chance Event Inundation Mapping



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Proposed Solutions

1. McKenna Blvd. and Raymond Rd. Reconstruction
2. Riva Rd. Reconstruction
3. Raymond Rd., Cameron Dr., Barton Rd., and Whitney Way Reconstruction
4. East Pass Relief Box Culvert
5. McKee Road Relief Box Culvert
6. Carnwood Road Box Culvert Replacement
7. Lancaster Lane Box Culvert Replacement
8. Canterbury Road Box Culvert Replacement
9. McKenna Boulevard-Pilgrim Road Box Culvert Replacement
10. Westbrook Lane Box Culvert Replacement
11. Lucy Lincoln Hiestand Park Box Culvert and Frisch Road Storm Sewer
12. Prairie Road Box Culvert and Theresa Terrace Storm Sewer
13. Local Sewer Improvements

Results

- **10% Chance Storm Event – Target: Eliminate storm sewer surcharge**
  - Existing: 6.6 out of 35.9 street miles do not meet the target
  - Proposed: 0.7 out of 35.9 street miles do not meet the target
- **4% Chance Storm Event – Target: Maintain drivability of city streets**
  - Existing: 2.5 out of 35.9 street miles do not meet the target
  - Proposed: 0.6 out of 35.9 street miles do not meet the target
- **1% Chance Storm Event – Target: No structure flooding**
  - Existing: 70 out of 3,089 buildings do not meet the target
  - Proposed: 29 out of 3,089 buildings do not meet the target
- **1% Chance Storm Event – Target: Pass flow through greenway crossings**
  - Existing: 3 out of 10 greenway crossings do not meet the target
  - Proposed: all greenway crossings DO meet the target

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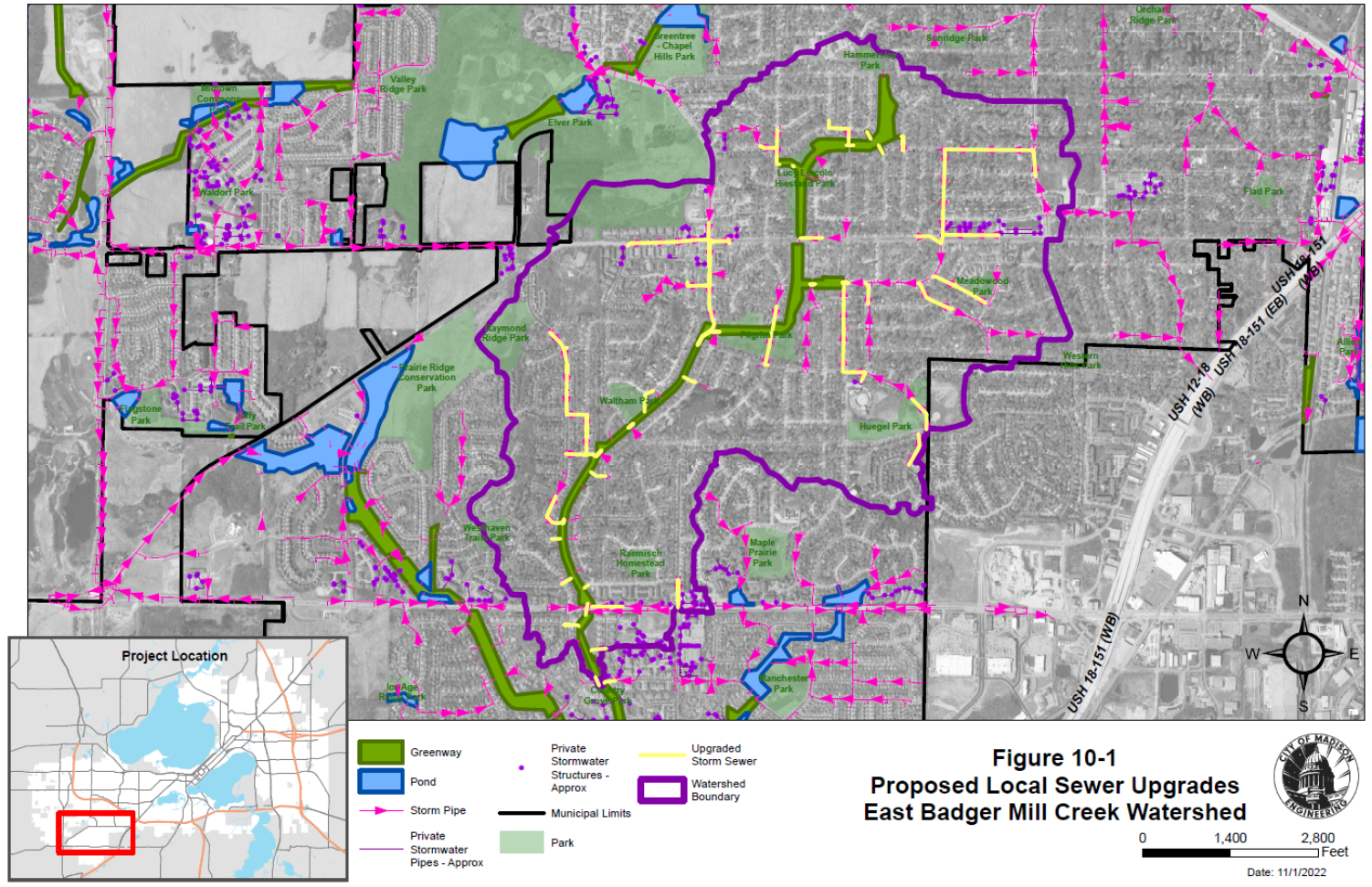
Recommended Solutions



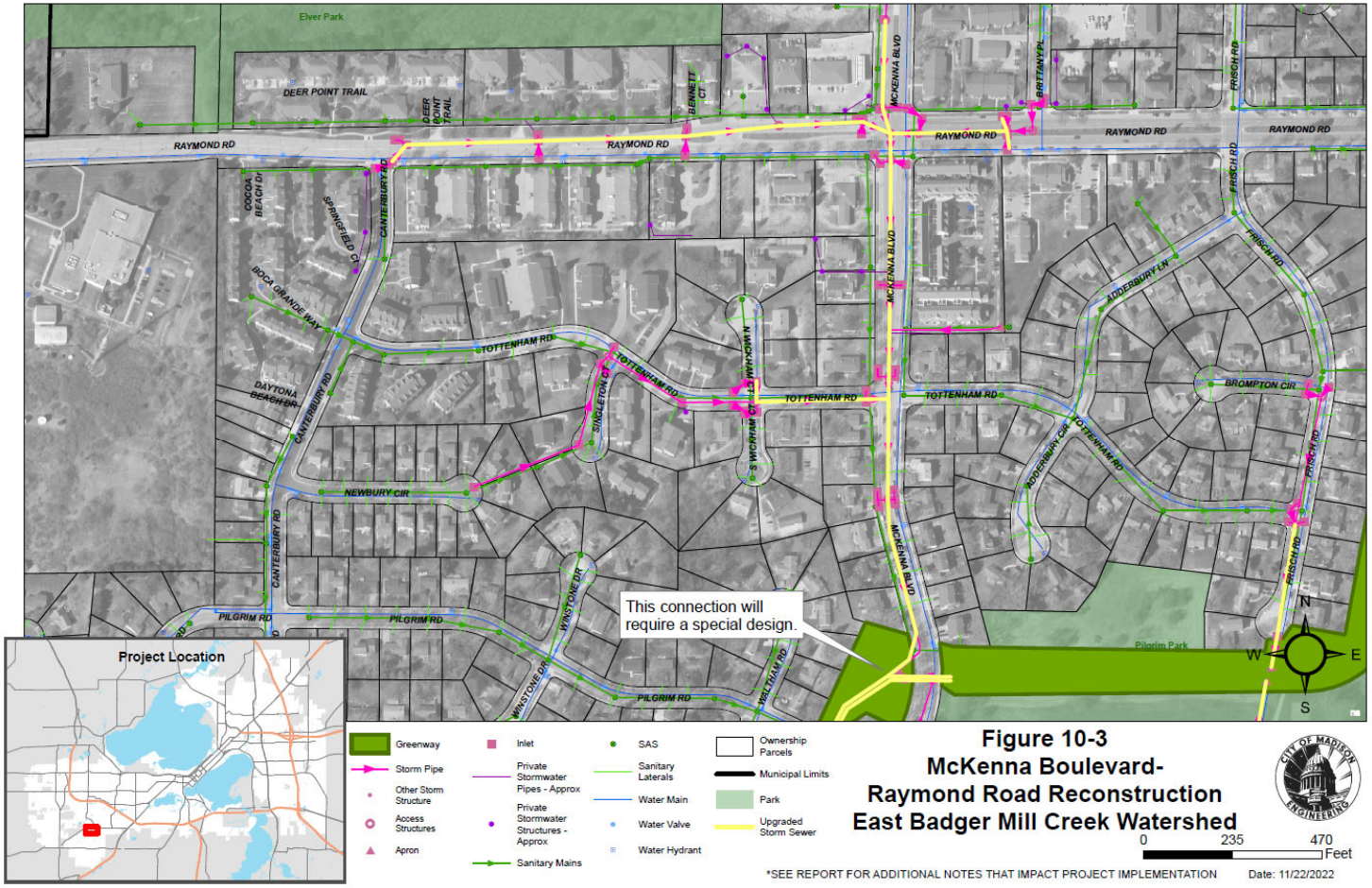
McKenna Blvd. and Raymond Rd. Reconstruction

Target:

- Reduce flooding during 10%, 4%, and 1% chance events

Conveyance improvements:

- Increase size of storm sewer and outfall to greenway
- Removes 7 structures from flooding
- Reduction in water leaving R/W during 1% chance event
- Reduction in street inundation for 10% and 4% chance events
- Cost estimate = $3.5 million



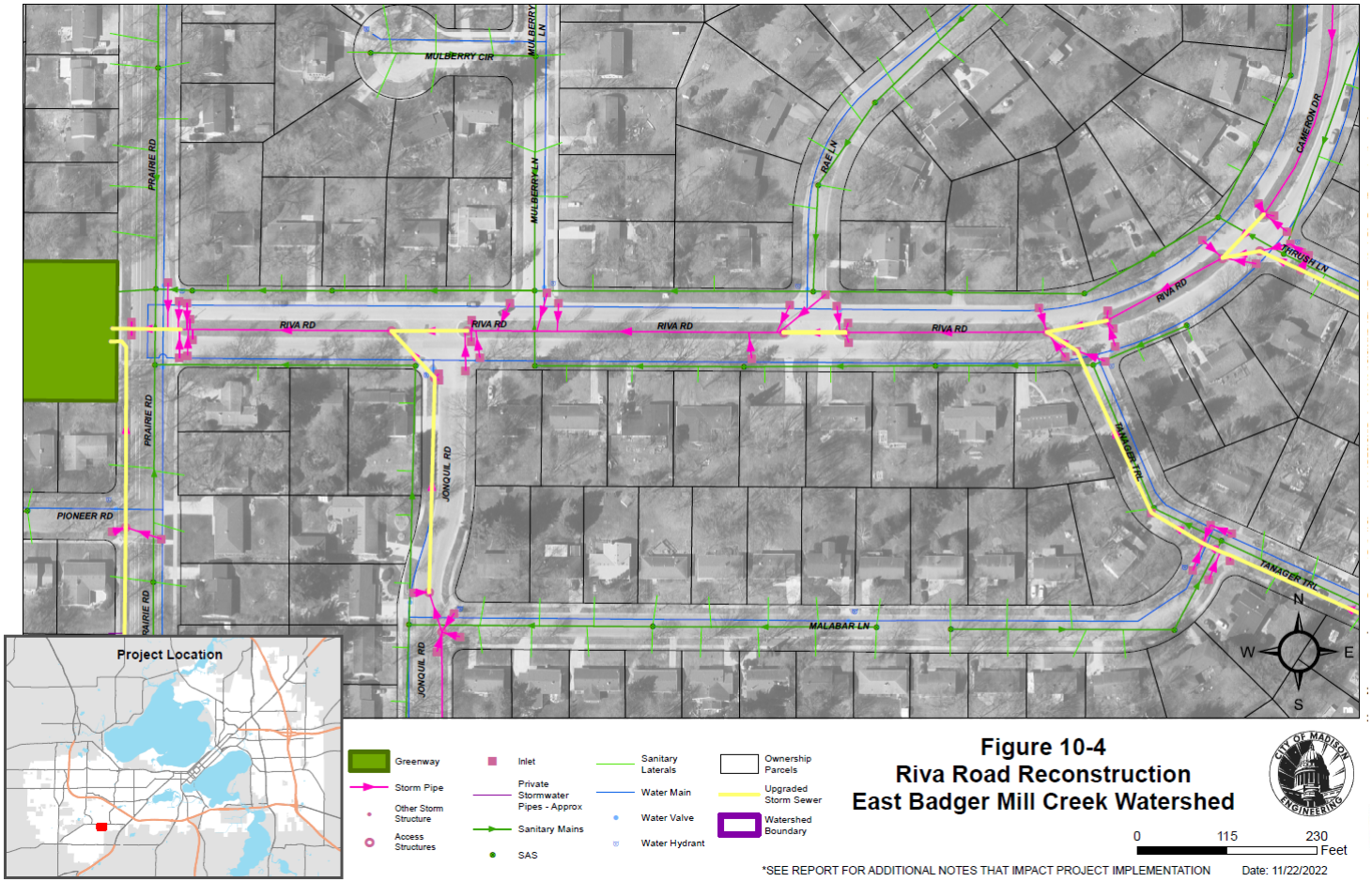
Riva Rd. Reconstruction

Target:

- Reduce flooding during 10%, 4%, and 1% chance events

Conveyance improvements:

- Install box sections and increase size of outfall to greenway
- Removes 2 structures from flooding
- Facilitates upstream sewer improvements
- Meets 10% chance event target
- Cost estimate = $910,000



Raymond, Cameron, Barton, and Whitney Reconstruction

Target:

- Reduce flooding during 10%, 4%, and 1% chance events

Conveyance improvements:

- Increase size of storm sewer
- Removes 5 structures from flooding
- Prevents UG parking inundation, 1% chance event
- Meets 10% and 4% chance event targets
- Cost estimate = $2.5 million

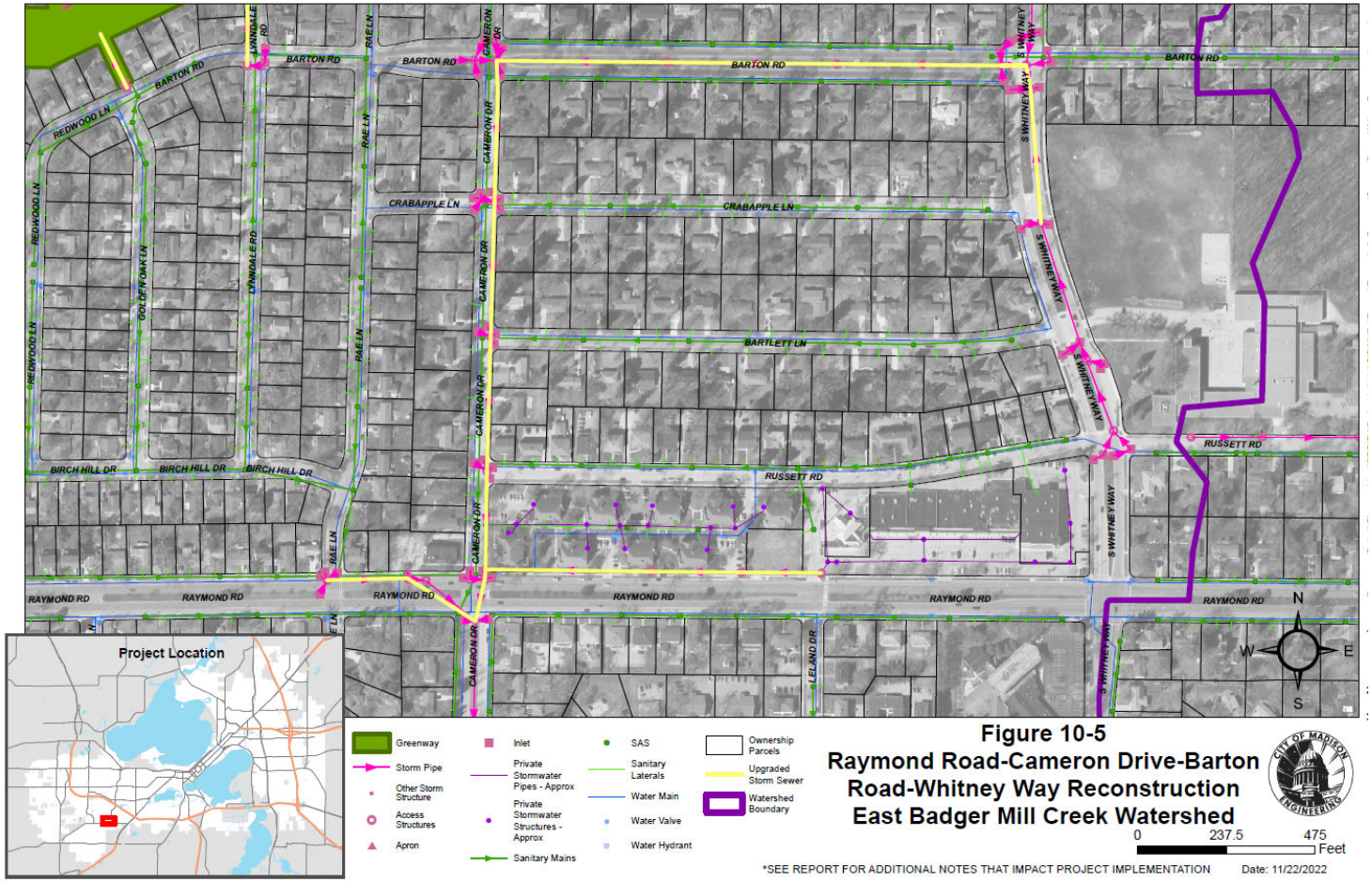


Figure 10-5
Raymond Road-Cameron Drive-Barton Road-Whitney Way Reconstruction
East Badger Mill Creek Watershed

*SEE REPORT FOR ADDITIONAL NOTES THAT IMPACT PROJECT IMPLEMENTATION

Date: 11/22/2022

Greenway Crossing Box Culvert Improvements

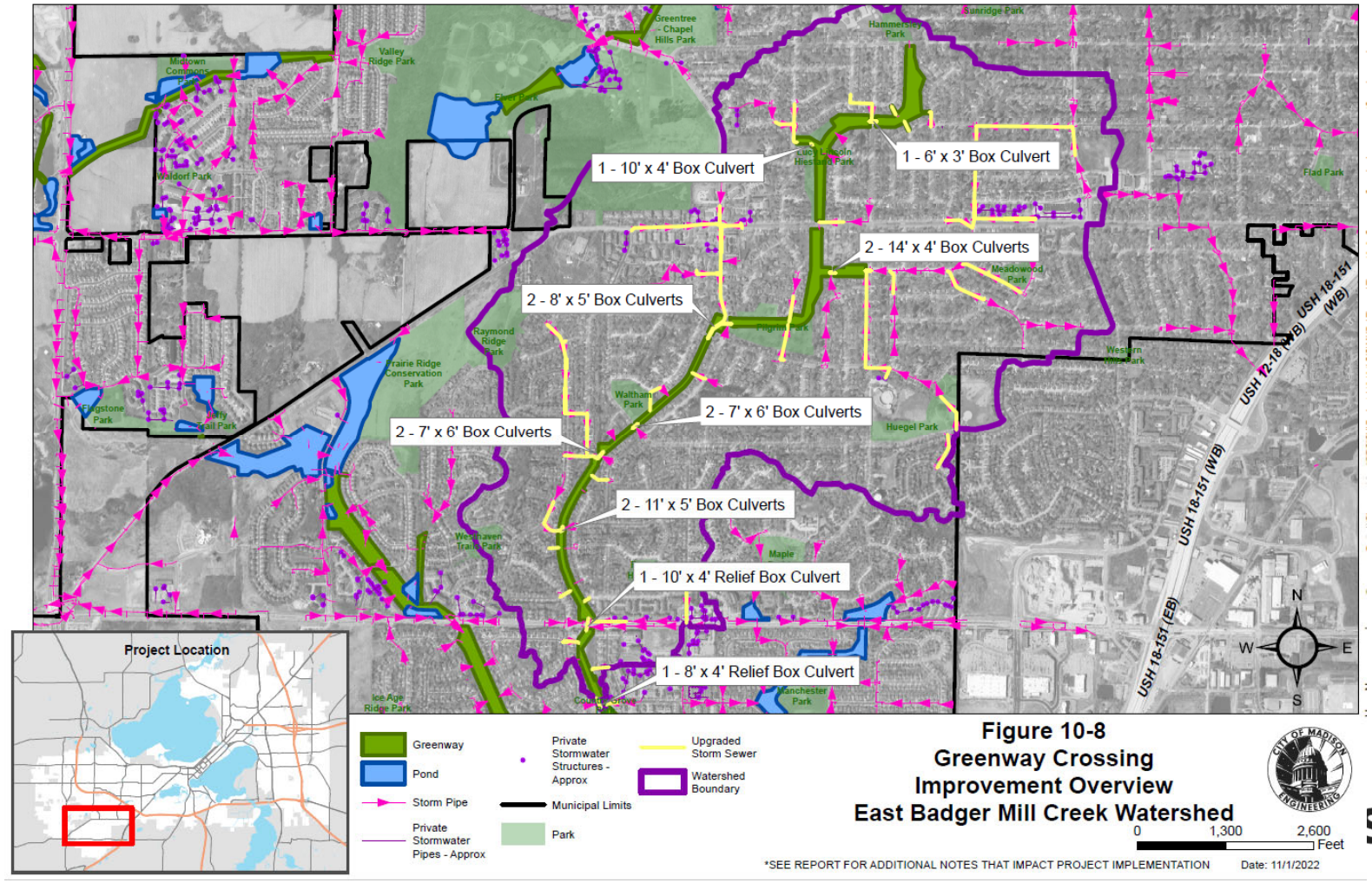
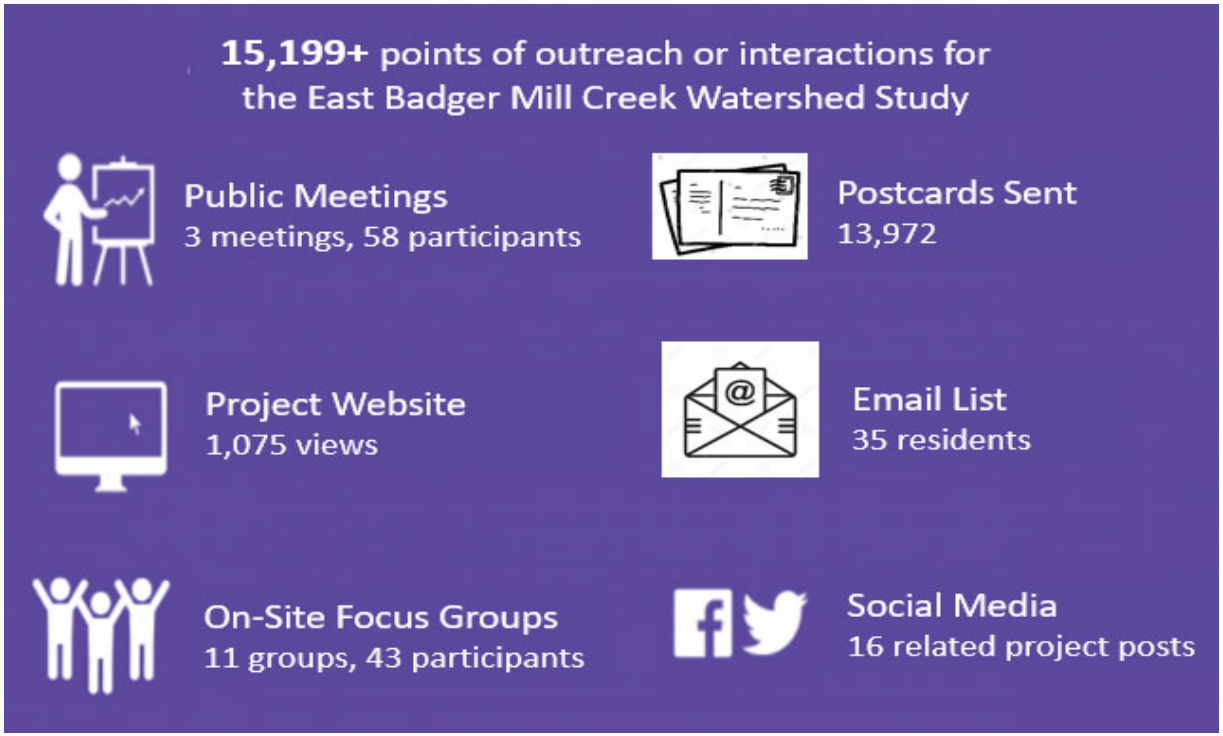


Figure 10-8
Greenway Crossing Improvement Overview
East Badger Mill Creek Watershed

*SEE REPORT FOR ADDITIONAL NOTES THAT IMPACT PROJECT IMPLEMENTATION

Date: 11/1/2022

Public Outreach for East Badger Mill Creek Report



- *Report posted for 30-day public comment period: none received*

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