

# Welcome!

## We will begin shortly...

<b>Virtual Meeting Schedule</b>	
<b>6:00 – 6:05</b>	Welcome
<b>6:05 – 6:45</b>	Presentation
<b>6:45 – 7:00</b>	Presentation Q & A (General)
<b>7:00 – 7:25</b>	Zoom Breakout Rooms
<b>7:25 – 7:30</b>	Come Back Together/Wrap-Up





# East Badger Mill Creek Watershed Study Public Input Meeting #3

City of Madison Engineering Division  
December 13, 2022

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# Meeting Technical Housekeeping

- This meeting will be recorded and posted to the project page.
- All attendees should be muted to keep background noise to a minimum.
- Use the “chat” button for technical issues with meeting to troubleshoot with staff to assist.
- Use the “Q and A” button to type questions about presentation. Questions will be answered live after the presentation.
- Inappropriate questions may be dismissed.
- Use the “raise your hand” button to verbally ask your question. You will be prompted to unmute when it is your turn.



**This meeting is being recorded.**

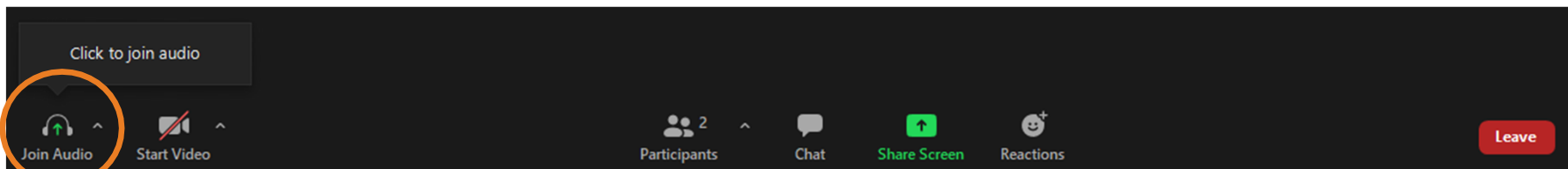
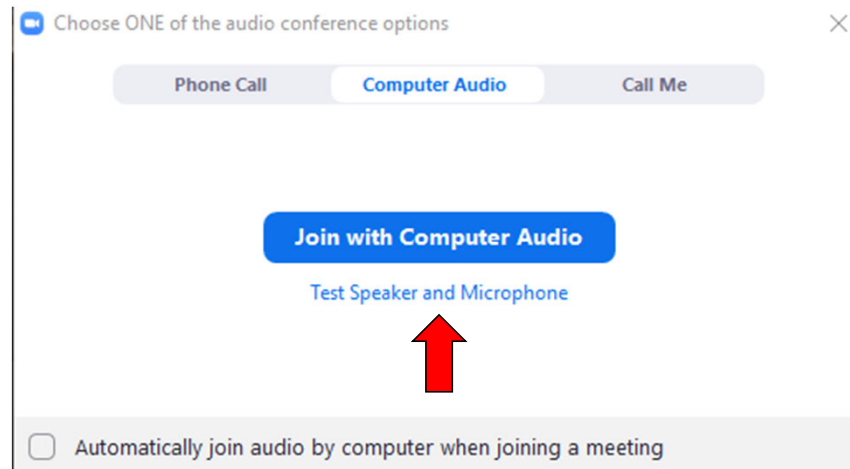
**It is a public record subject to disclosure.**

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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# How to Participate



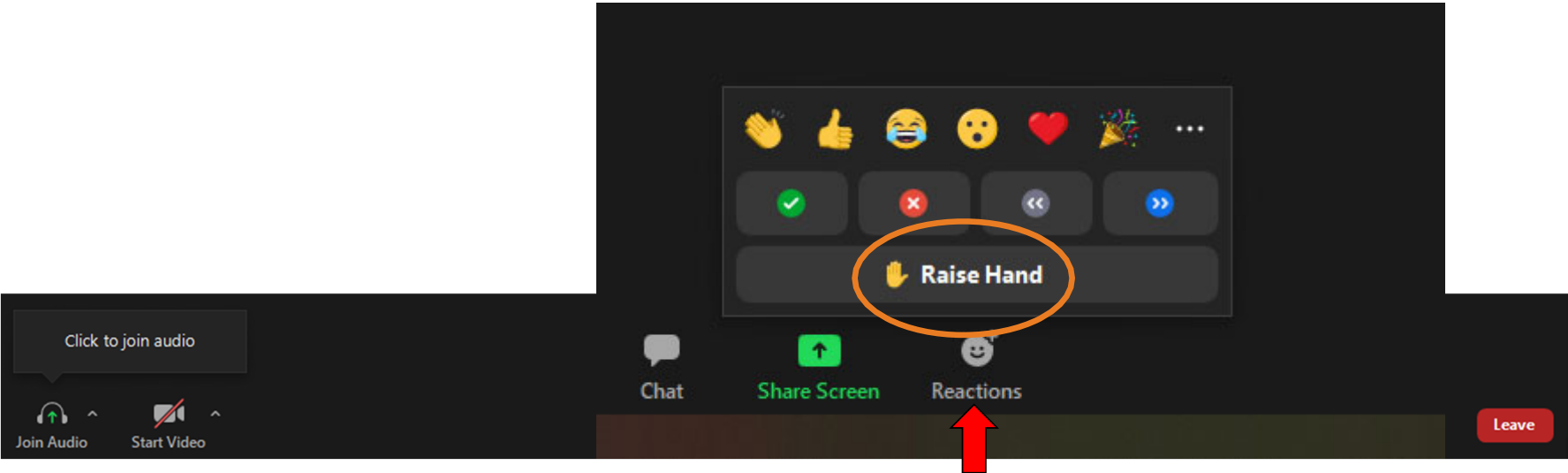
Make sure to join audio

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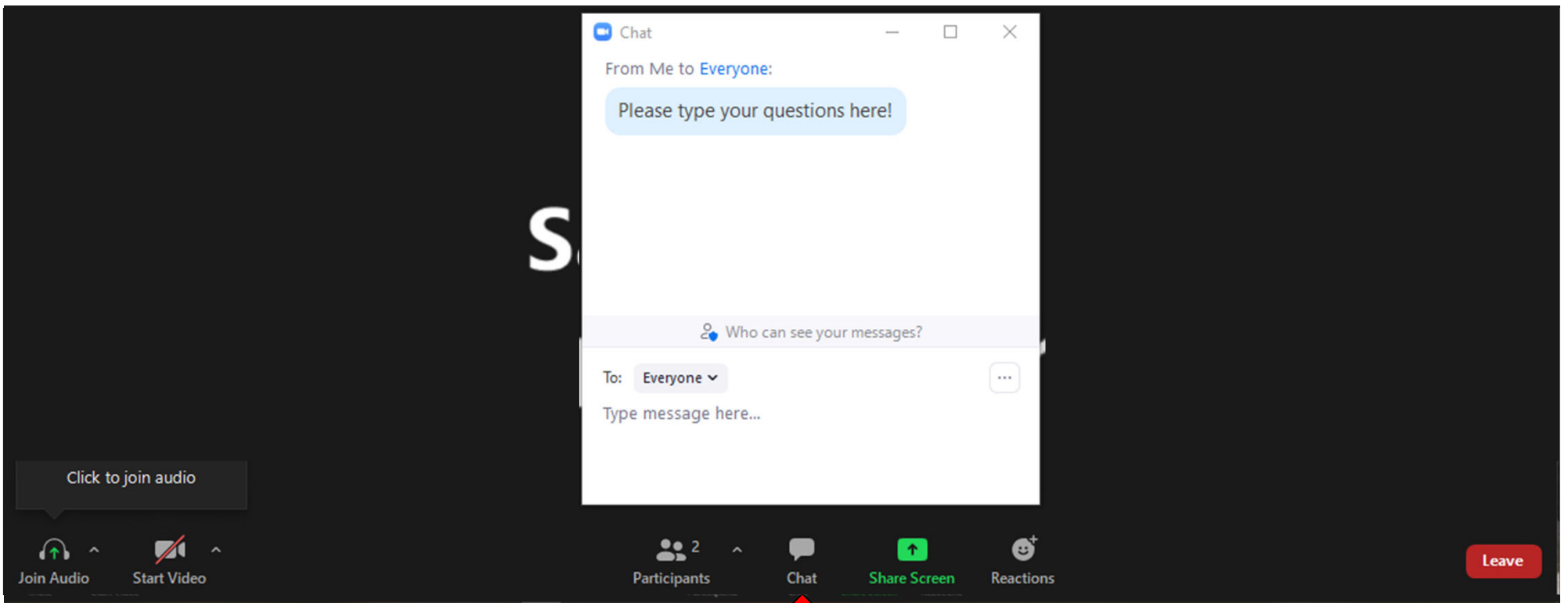


# How to Participate

Raise your hand to be unmuted for comments or ask additional questions.



# How to Participate



Use chat if you have technical issues or a question for the panelists.

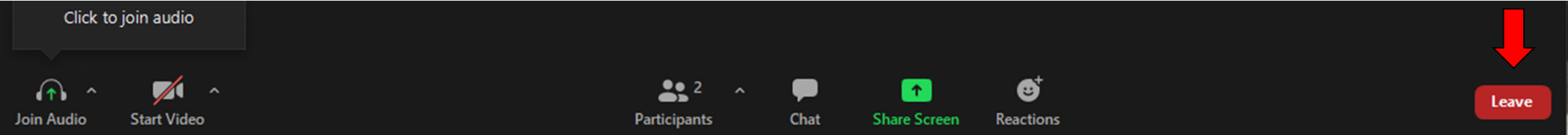
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# How to Participate

When you are ready to leave the meeting

To leave the meeting click here





# 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 “Chat”
    - *To find the Zoom Chat Box, hover over the edge of your screen. A toolbar will appear, and you can click on “Chat”*
  - Questions answered at the end of the Presentation
- Wrap Up (Hannah Mohelnitzky, City of Madison)
- Breakout Groups (City of Madison staff)
  - An option to join breakout groups will appear on your screen



# Presentation Outline

1. Definitions of commonly used terms
2. Study location
3. Watershed study schedule
4. Flood mitigation targets
5. Inundation mapping
6. Recommended solutions development process
7. Recommended solutions
  - a. Standalone projects
  - b. Local storm sewer
8. Implementation and cost
9. Why aren't all flood targets met?
10. Next steps



# Definitions of commonly used terms

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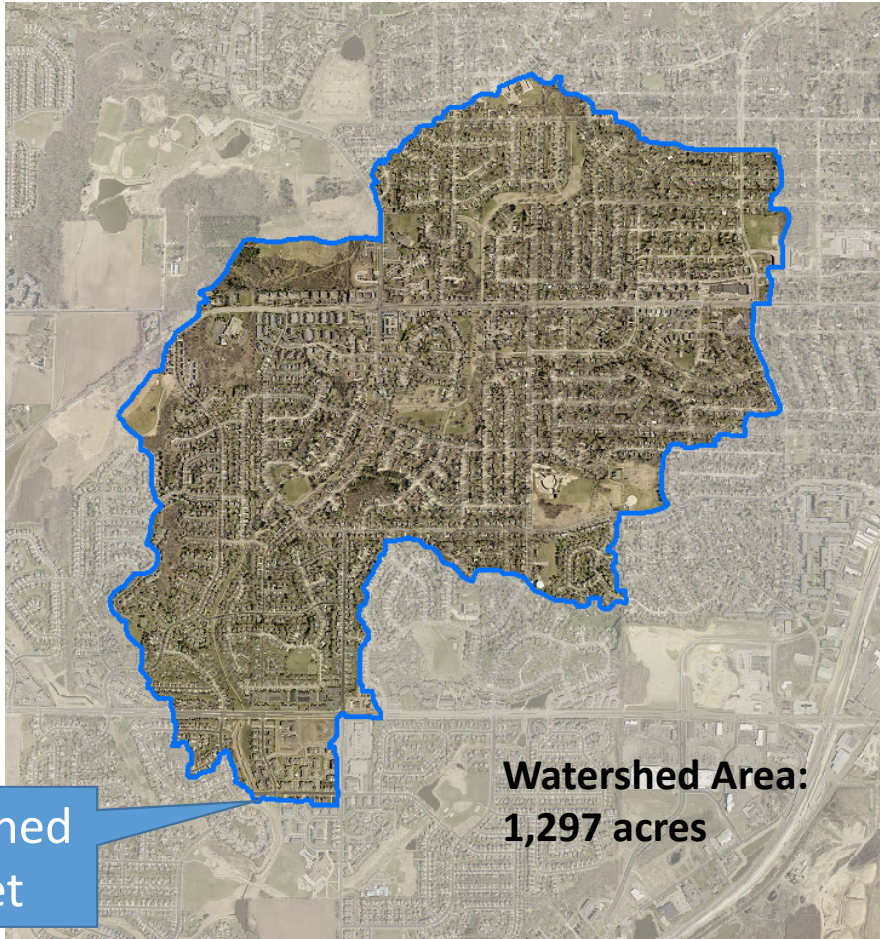




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- **Standalone Projects:** Flood mitigation projects that will be constructed on their own – not tied to another already-scheduled project

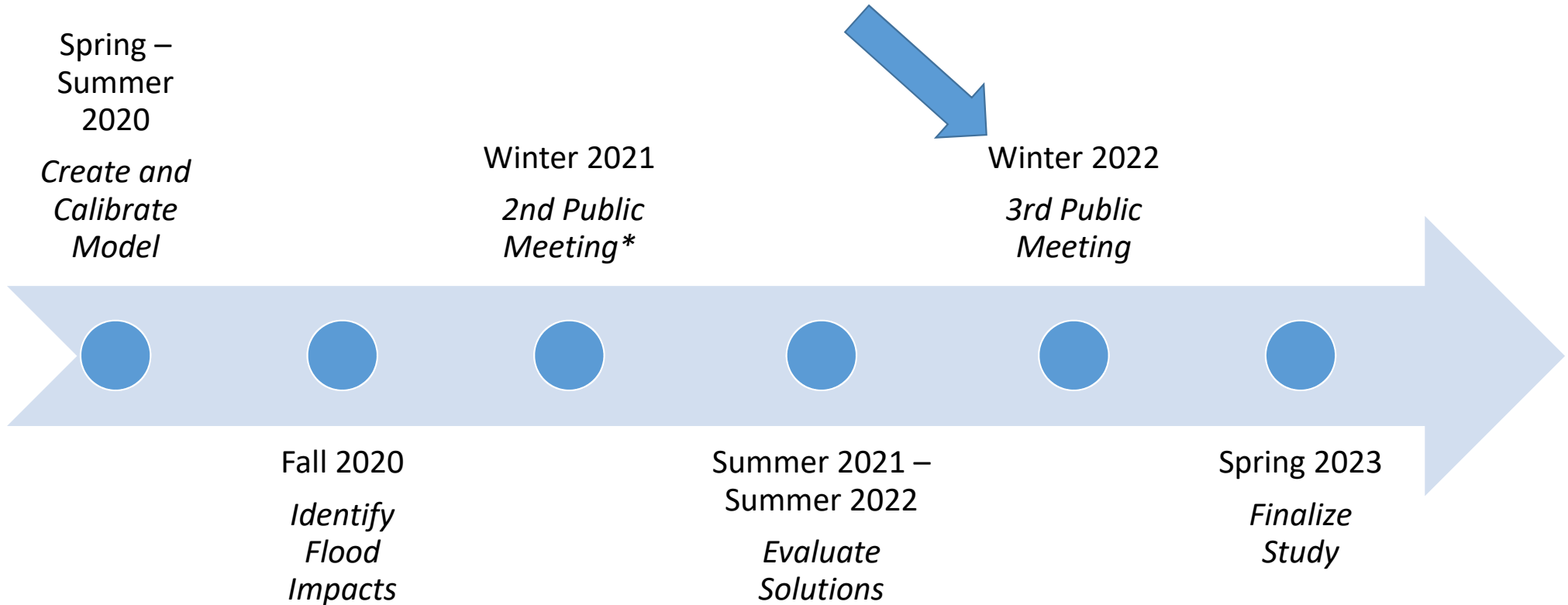
# Watershed Location



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.

# Watershed Study Schedule



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

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# Flood Mitigation Targets for Watershed Studies

- 10% Chance Event (4.09" rain/24 hours)
  - No surcharging of storm sewer onto roadway (storm sewer pipes are sized to carry storm)



# Flood Mitigation Targets for Watershed Studies

- 10% Chance Event (4.09" rain/24 hours)
- 4% Chance Event (5.02" rain/24 hours)
  - Less than 0.5 ft at centerline of road (roads passable for emergency vehicles)



# Flood Mitigation Targets for Watershed Studies

- 10% Chance Event (4.09" rain/24 hours)
- 4% Chance Event (5.02" rain/24 hours)
- 1% Chance Event (6.66" rain/24 hours)
  - No structure (home/building) flooding
  - No greenway crossing overflow
    - *stormwater does not come out of greenway and flow over the road*

# Flood Mitigation Targets for Watershed Studies

- 10% Chance Event (4.09" rain/24 hours)
- 4% Chance Event (5.02" rain/24 hours)
- 1% Chance Event (6.66" rain/24 hours)
- 0.2% Chance Event (8.94" rain/24 hours)
  - Safe conveyance of overflow



# Flood Mitigation Targets for Watershed Studies

- Not all targets are met for all areas of the watershed
  - Problems are complex – mitigating factors discussed later in the presentation
  - For the East Badger Mill Creek watershed with the recommended solutions, targets were met in most of the watershed





## INUNDATION MAPPING DISCLAIMER

THE INTENT OF THE INUNDATION MAPS ARE TO ASSIST INDIVIDUALS IN QUICKLY FINDING GENERAL FLOOD RISK INFORMATION FOR THE INCORPORATED AND UNINCORPORATED AREAS OF THE CITY OF MADISON. INUNDATION 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 INUNDATION MAPS AS THEIR PRIMARY RESOURCE FOR MAKING OFFICIAL FLOOD RISK DETERMINATIONS FOR INSURANCE, LENDING, OR OTHER RELATED PURPOSES. THIS IS NOT AN OFFICIAL FLOOD MAP.

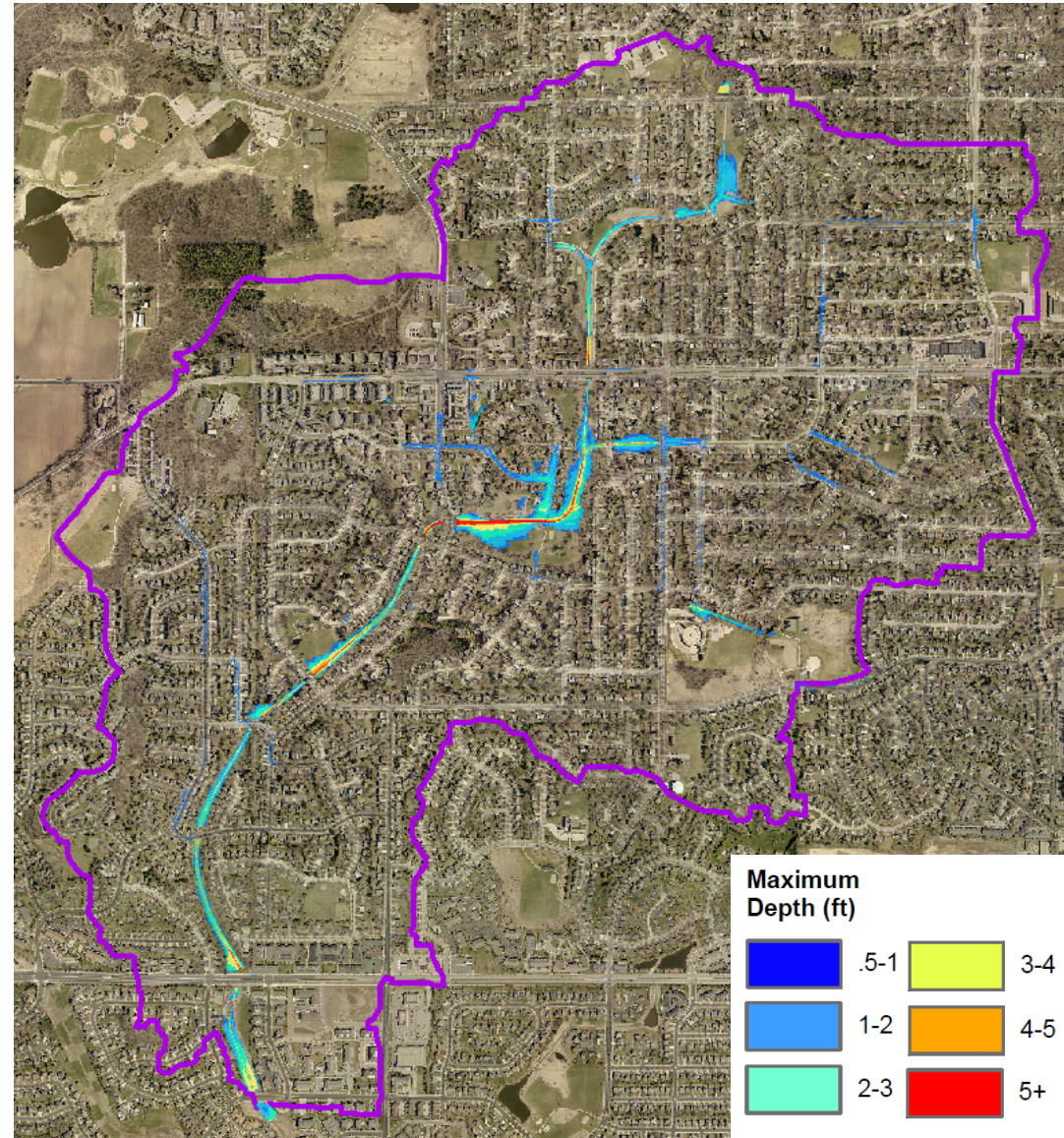
THE CITY OF MADISON ASSUMES NO LIABILITY FOR ANY ERRORS, OMISSIONS, INACCURACIES, COMPLETENESS OR USEFULNESS OF THE INFORMATION PROVIDED REGARDLESS OF THE CAUSE OR FOR ANY DECISION MADE, ACTION TAKEN, OR ACTION NOT TAKEN BY THE USER IN RELIANCE UPON ANY OF THE MAPS OR INFORMATION PROVIDED.

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# 10% Chance Existing Inundation Mapping

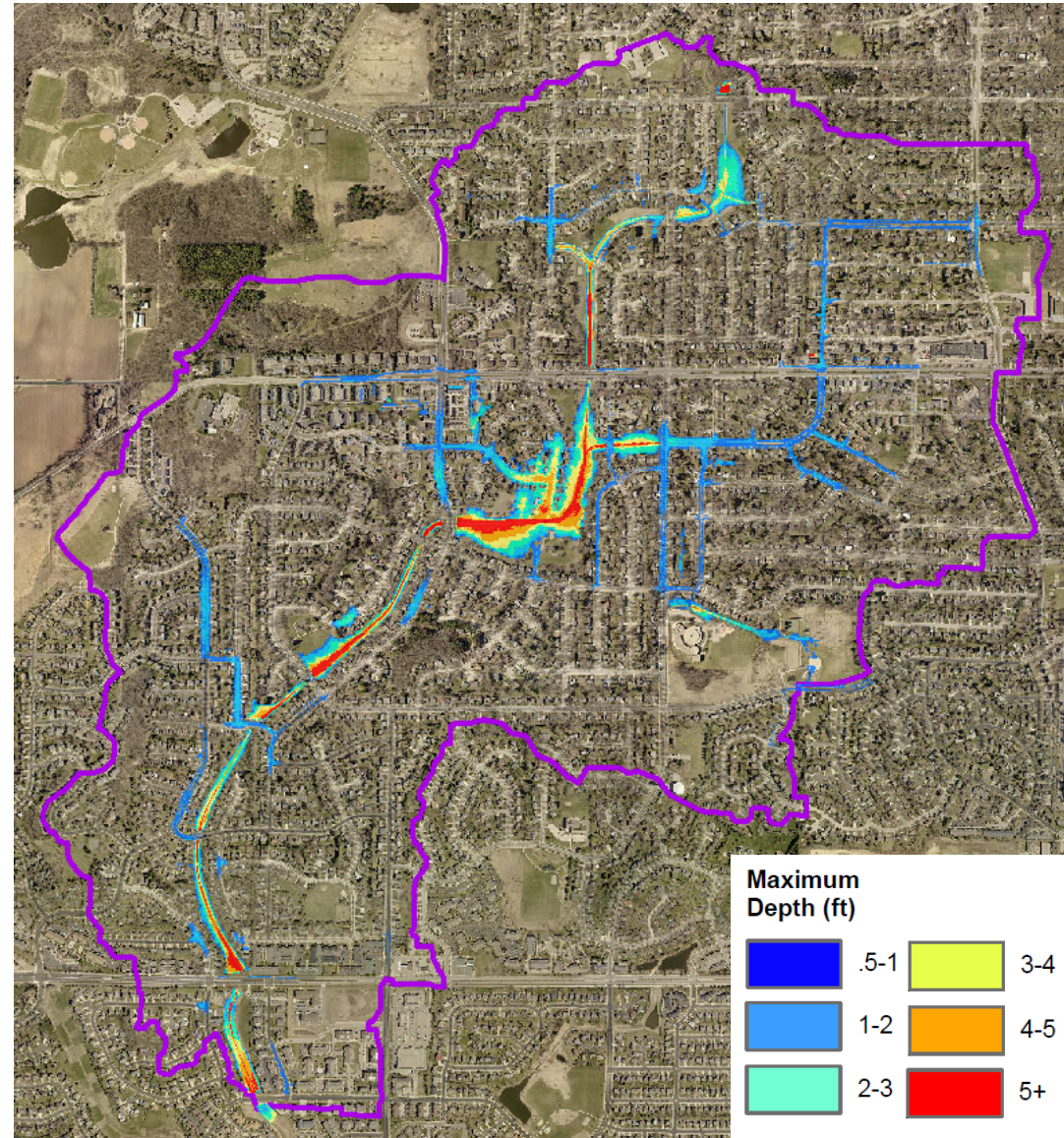
- 6.7 miles out of 35.9 miles of street do not meet 10% chance event target





# 1% Chance Existing Inundation Mapping

- 70 out of 3,089 structures do not meet 1% chance event target



# Recommended Solutions

- Iterative process
  - Brainstormed solutions
  - Analyzed ideas and provided results
  - Some solutions found to be non-viable for various reasons
  - Developed a comprehensive set of solutions



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- Iterative process
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- **Met with City Agencies for feedback on:**
  - Impacts to Agency's infrastructure/property
  - Additional solutions
  - Places for cooperation/win-win solution



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- Revised solutions based on agency feedback



# Recommended Solutions

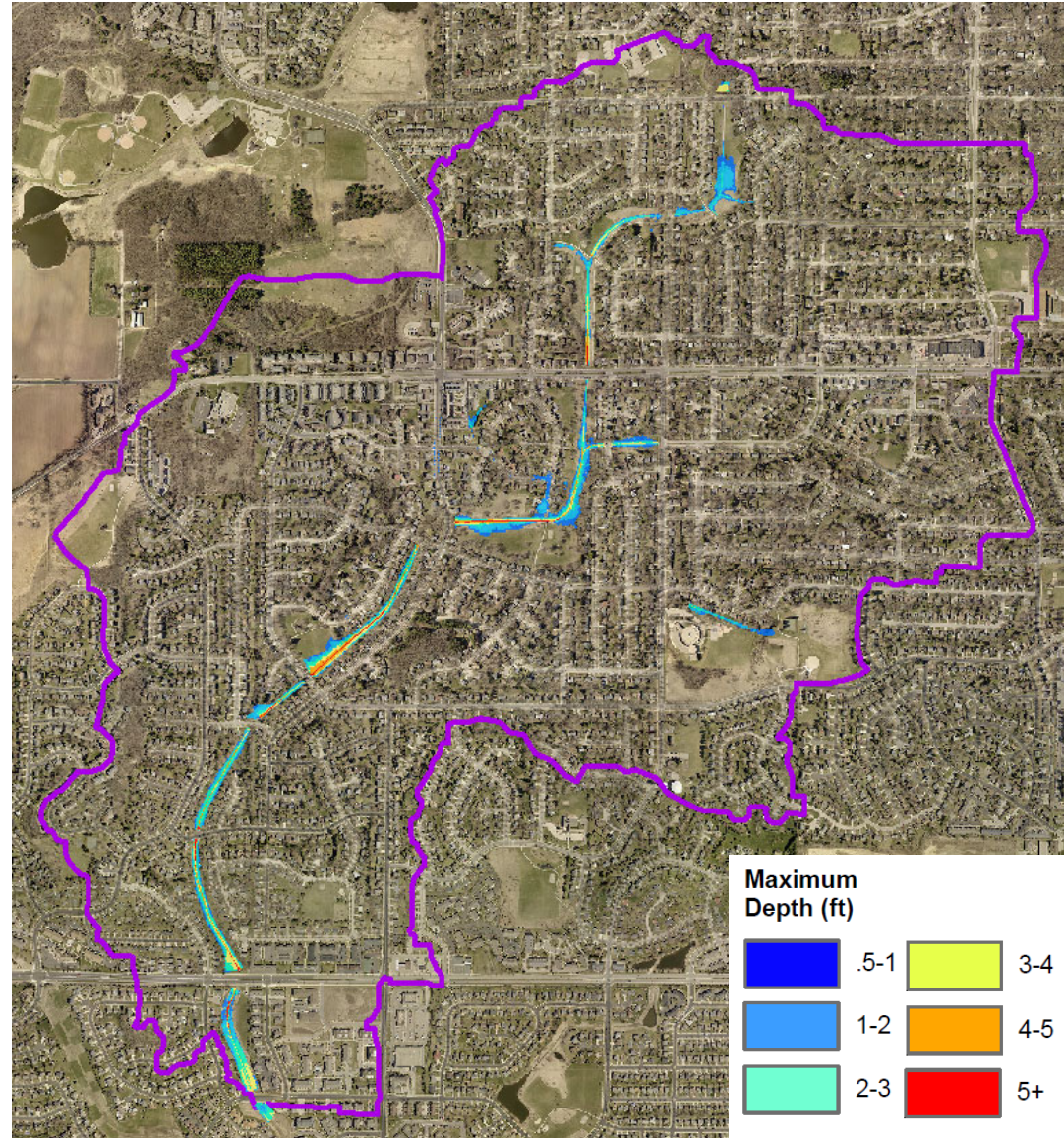
- Iterative process
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  - Developed a comprehensive set of solutions
- Met with City Agencies for feedback on:
  - Impacts to Agency's infrastructure/property
  - Additional solutions
  - Places for cooperation/win-win solution
- Revised solutions based on agency feedback
- Meeting with public this evening





# 10% Chance Proposed Inundation Mapping

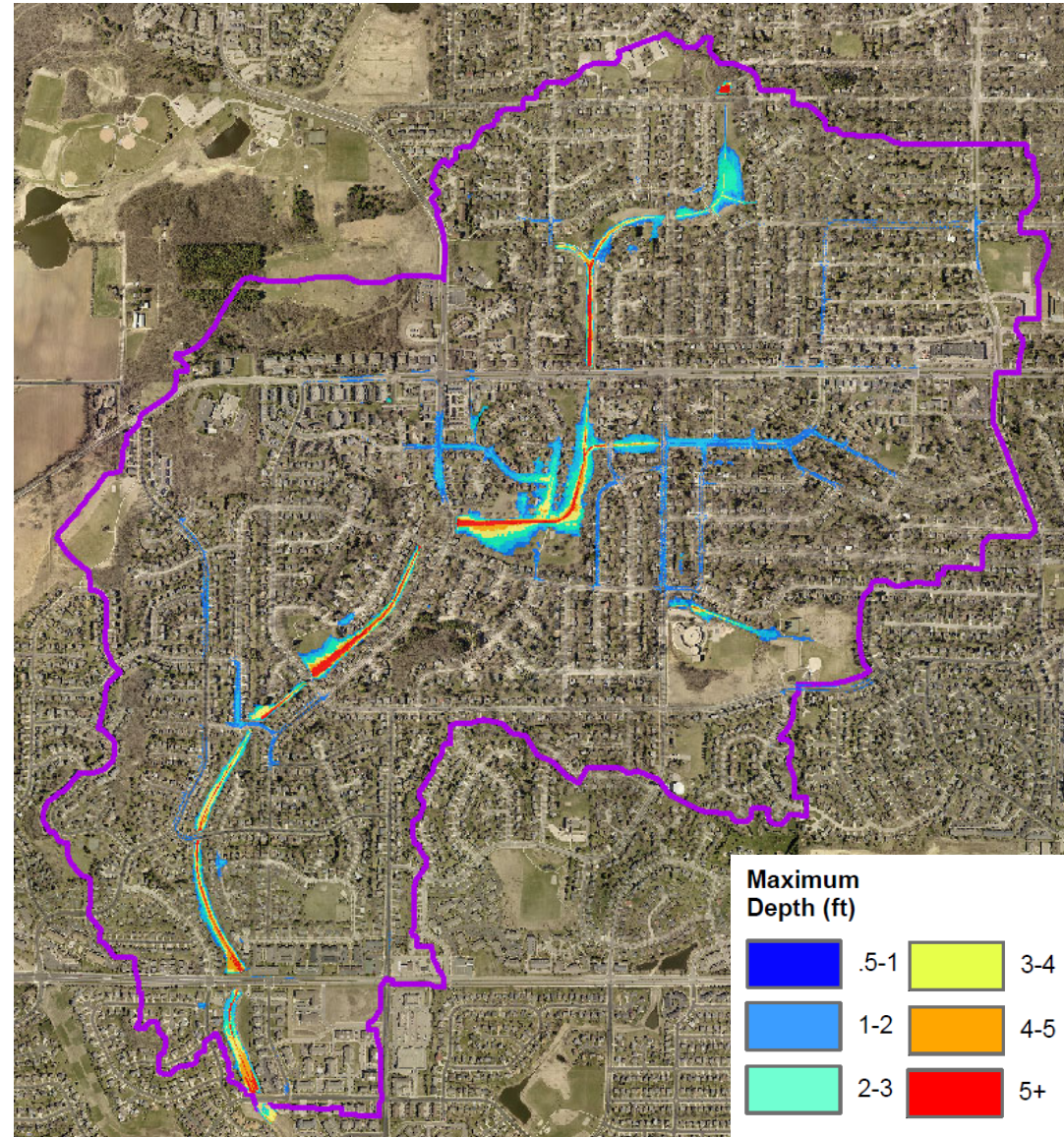
- 0.7 miles out of 35.9 miles of street do not meet 10% chance event target





# 1% Chance Proposed Inundation Mapping

- 31 out of 3,089 structures do not meet 1% chance event target



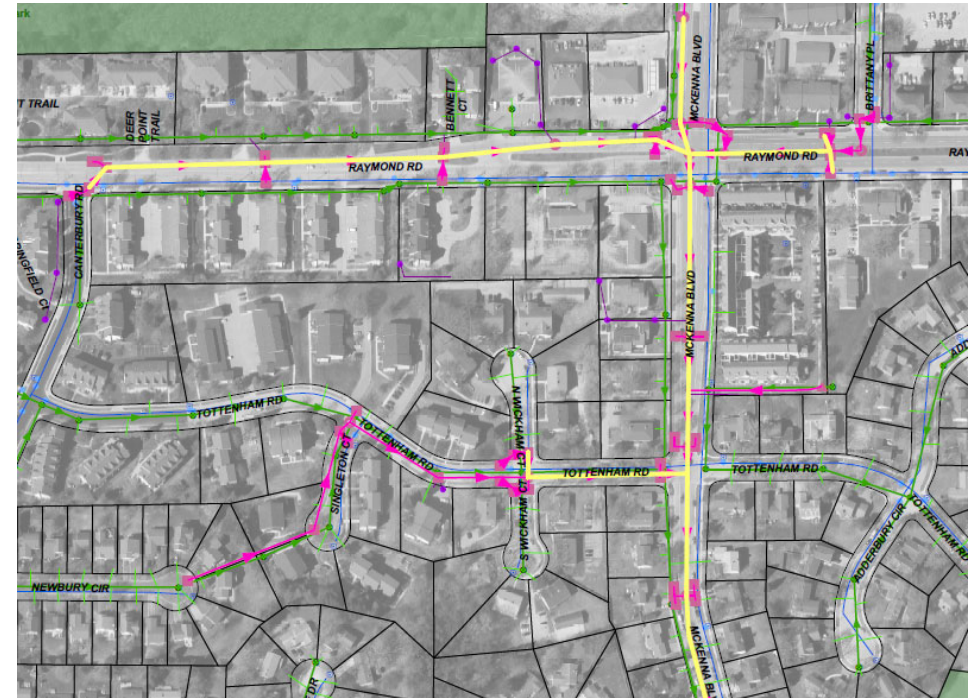
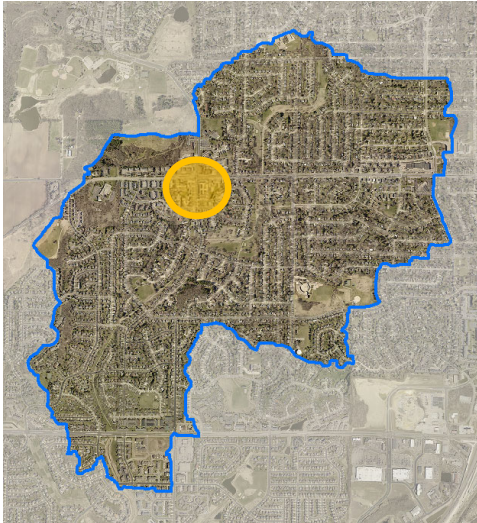
# Recommended Solutions

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 Replacement
12. Prairie Road Box Culvert Replacement and Theresa Terrace Storm Sewer



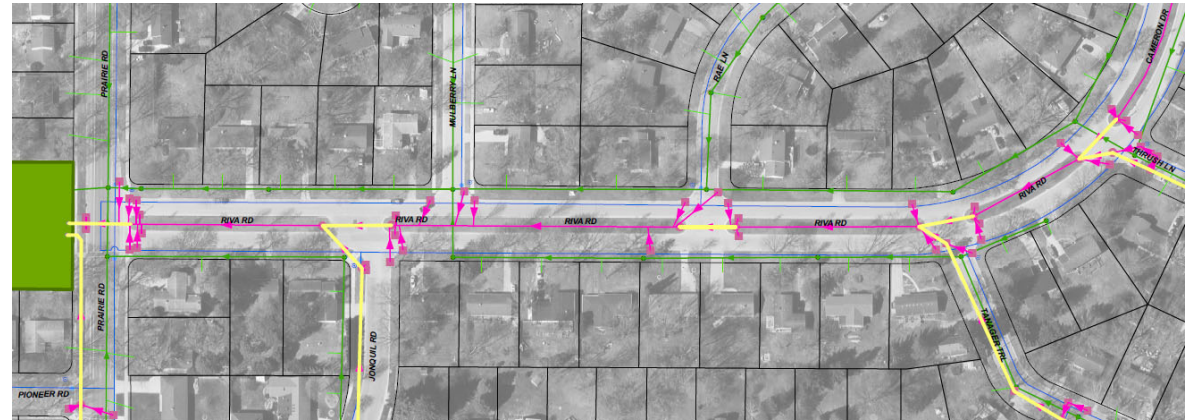
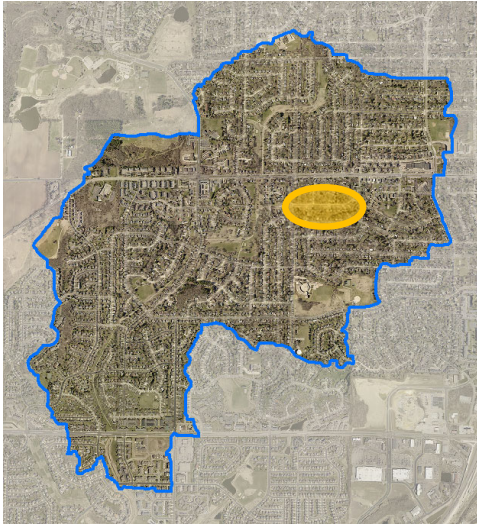


# 1. McKenna Blvd. and Raymond Rd. Reconstruction



- **Goal: Reduce flooding during 10%, 4%, and 1% events**
- Increase storm sewer size
- Removes 7 structures from flooding
- Significant reduction in street ponding for all events
- Cost estimate = \$3.5 million

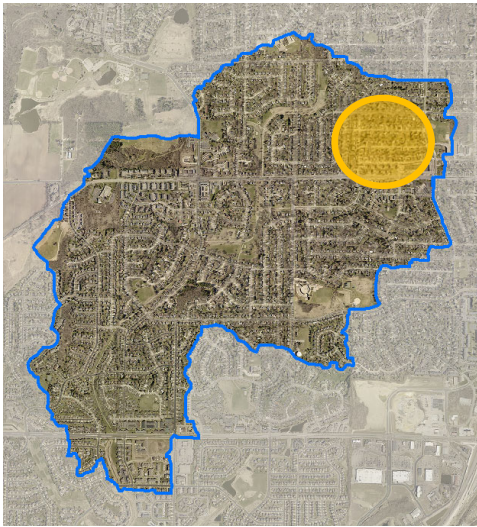
## 2. Riva Rd. Reconstruction



- **Goal: Reduce flooding during 10%, 4%, and 1% events**
- Increase storm sewer size and outfall to greenway
- Removes 2 structures from flooding
- Facilitates upstream storm sewer improvements
- Significant reduction in street ponding for 10% and 4% chance events
- Cost estimate = \$910,000



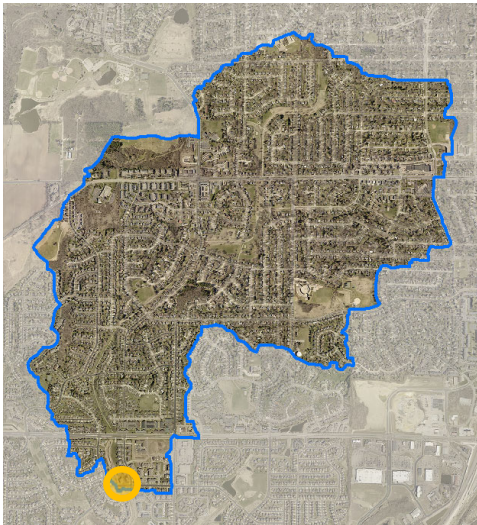
### 3. Raymond, Cameron, Barton, and Whitney Reconstruction



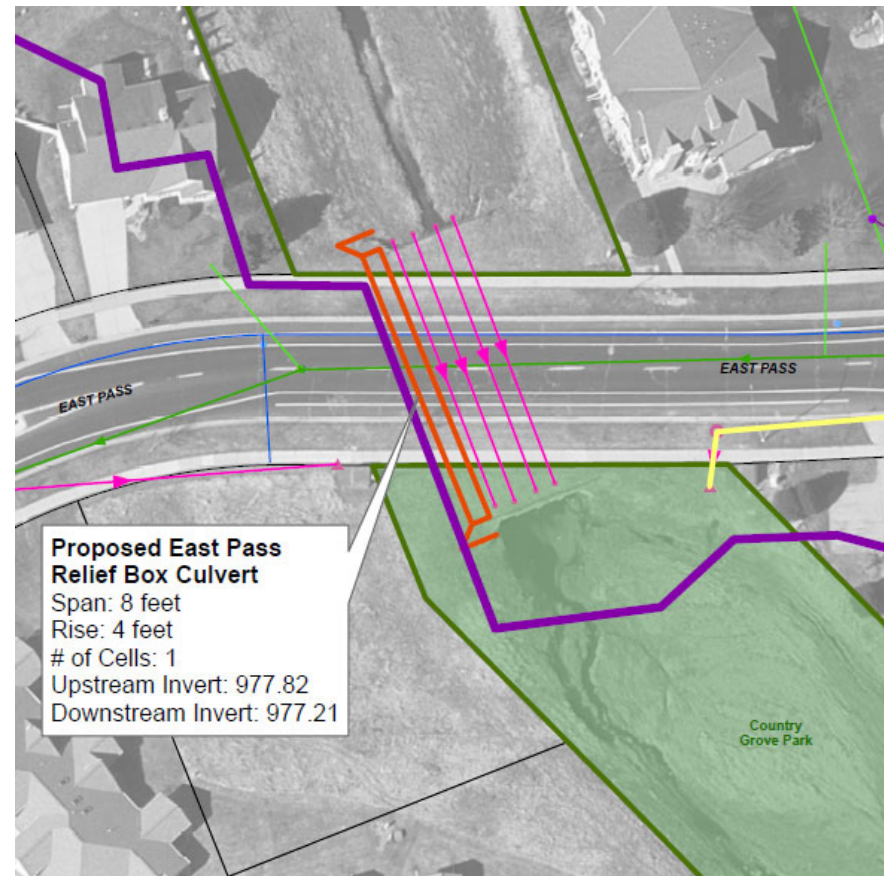
- **Goal: Reduce flooding during 10%, 4%, and 1% events**
- Increase storm sewer size
- Removes 5 structures from flooding
- Meets 10% and 4% chance event goals for street ponding
- Cost estimate = \$2.5 million



## 4. East Pass Relief Box Culvert



- **Goal: Convey 1% chance event**
- Add box culvert to existing greenway crossing
- Facilitates upstream improvements without road overtopping or new structure inundation
- Cost estimate = \$370,000

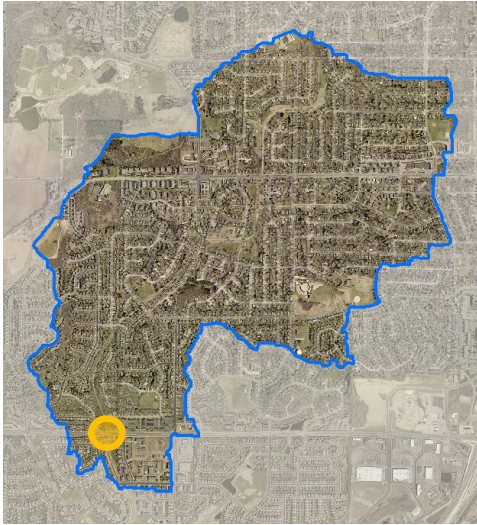


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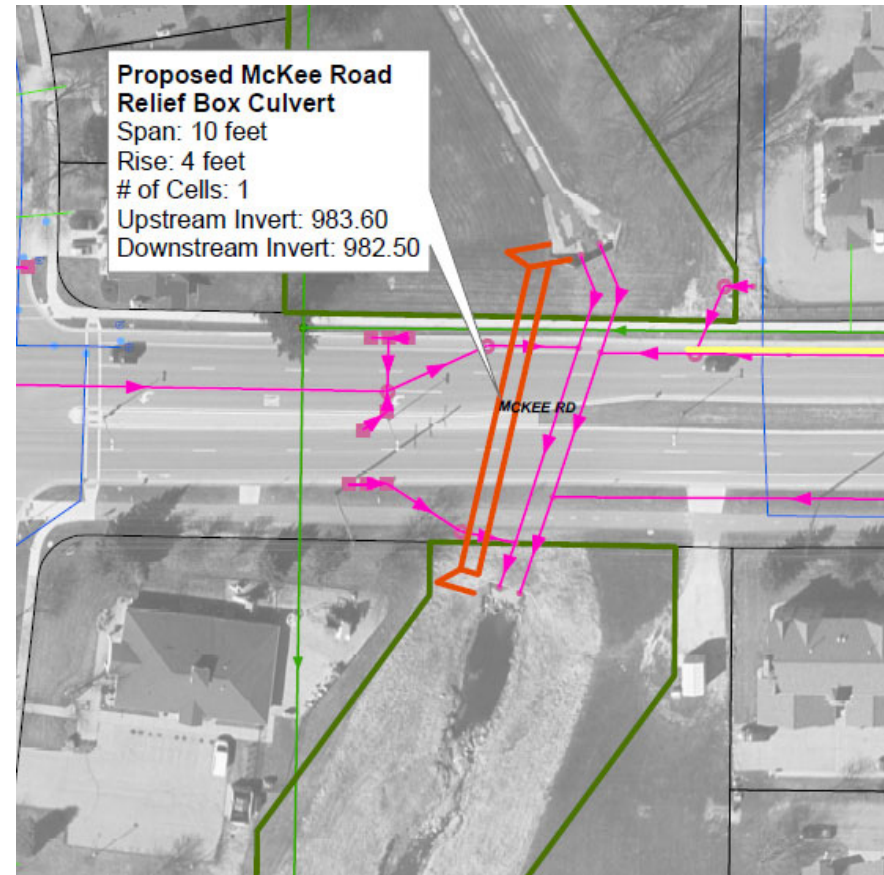




## 5. McKee Road Relief Box Culvert



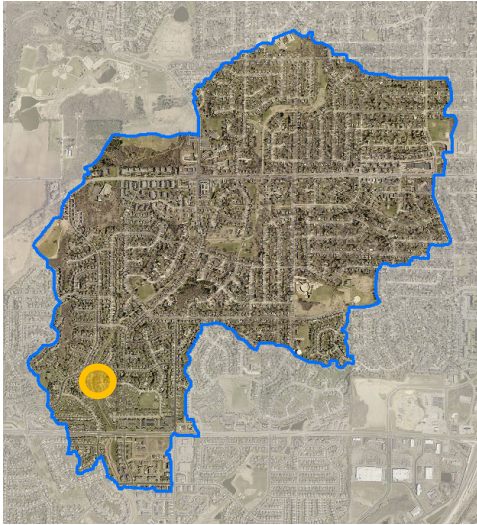
- **Goal: Convey 1% chance event**
- Add box culvert to existing greenway crossing
- Removes 1 structure from flooding
- Facilitates upstream improvements without road overtopping or new structure inundation
- Cost estimate = \$600,000



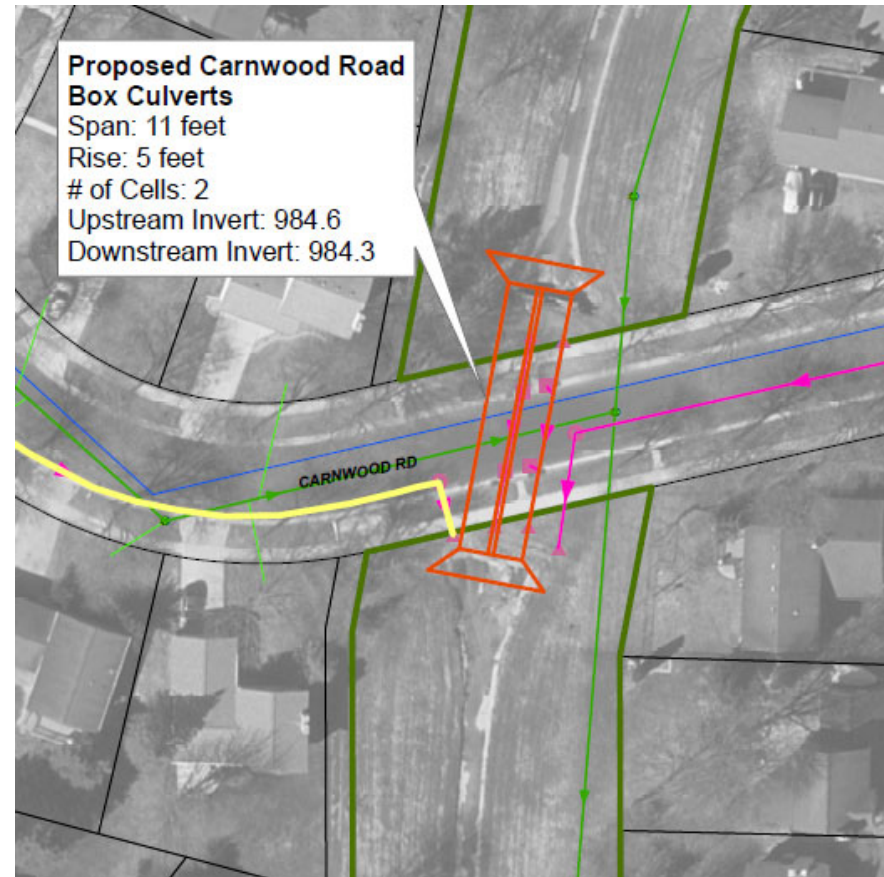
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## 6. Carnwood Road Box Culvert Replacement



- **Goal: Convey 1% chance event**
- Replace existing pipe culverts with box culverts
- Facilitates upstream improvements without road overtopping or new structure inundation
- Cost estimate = \$710,000

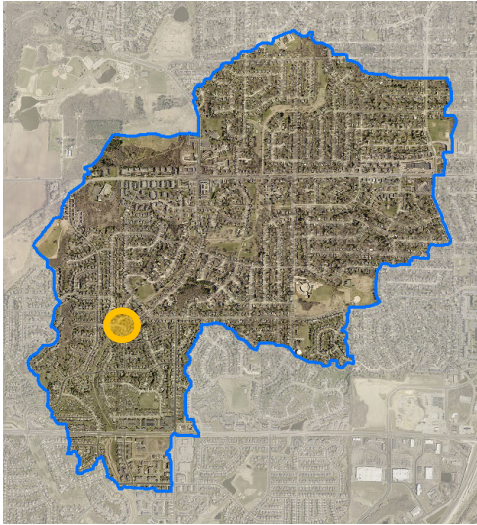


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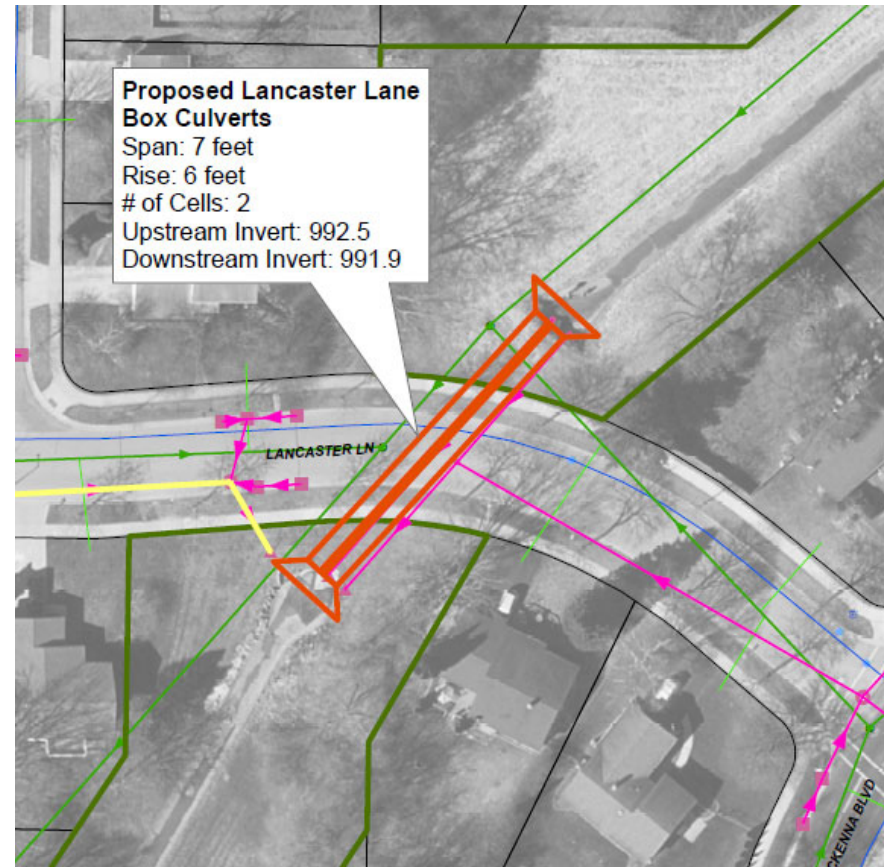




## 7. Lancaster Lane Box Culvert Replacement



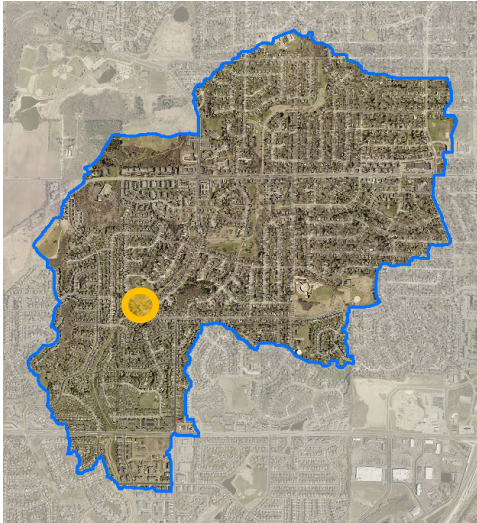
- **Goal: Convey 1% chance event**
- Replace existing pipe culverts with box culverts
- Facilitates upstream improvements without road overtopping or new structure inundation
- Cost estimate = \$720,000



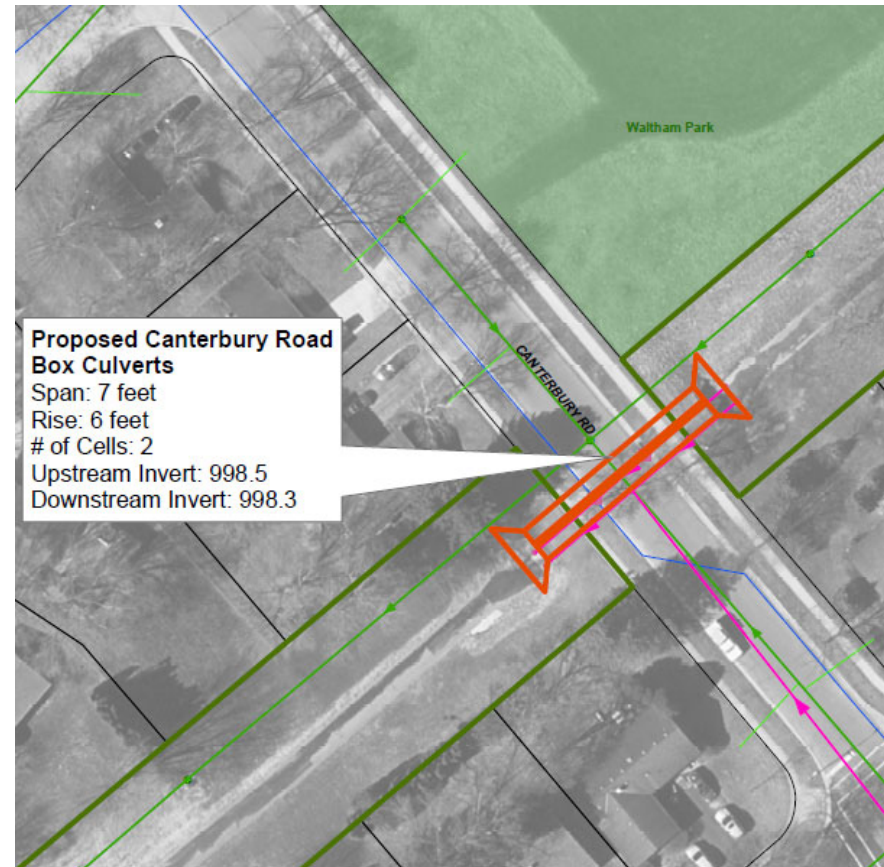
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## 8. Canterbury Road Box Culvert Replacement



- **Goal: Convey 1% chance event**
- Replace existing pipe culverts with box culverts
- Facilitates upstream improvements without road overtopping or new structure inundation
- Cost estimate = \$610,000

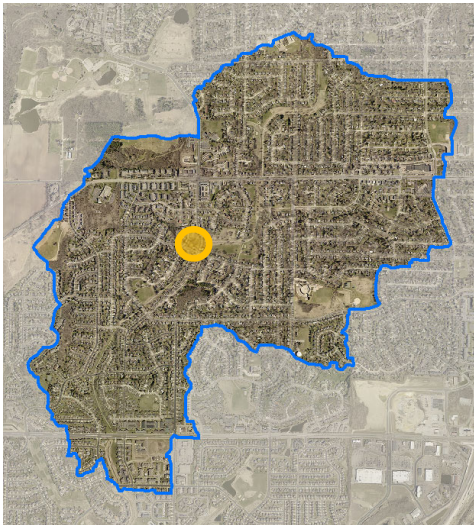


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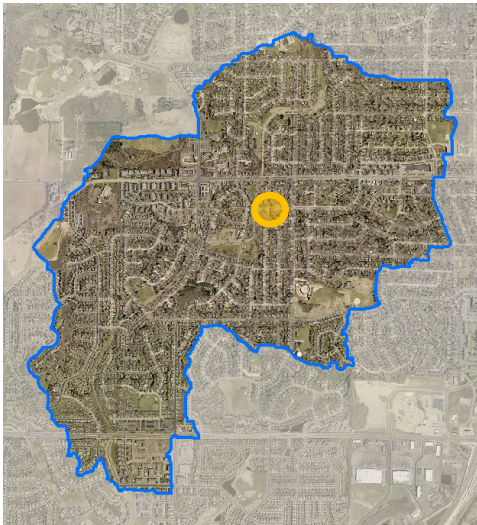


# 9. McKenna Blvd.-Pilgrim Road Box Culvert Replacement

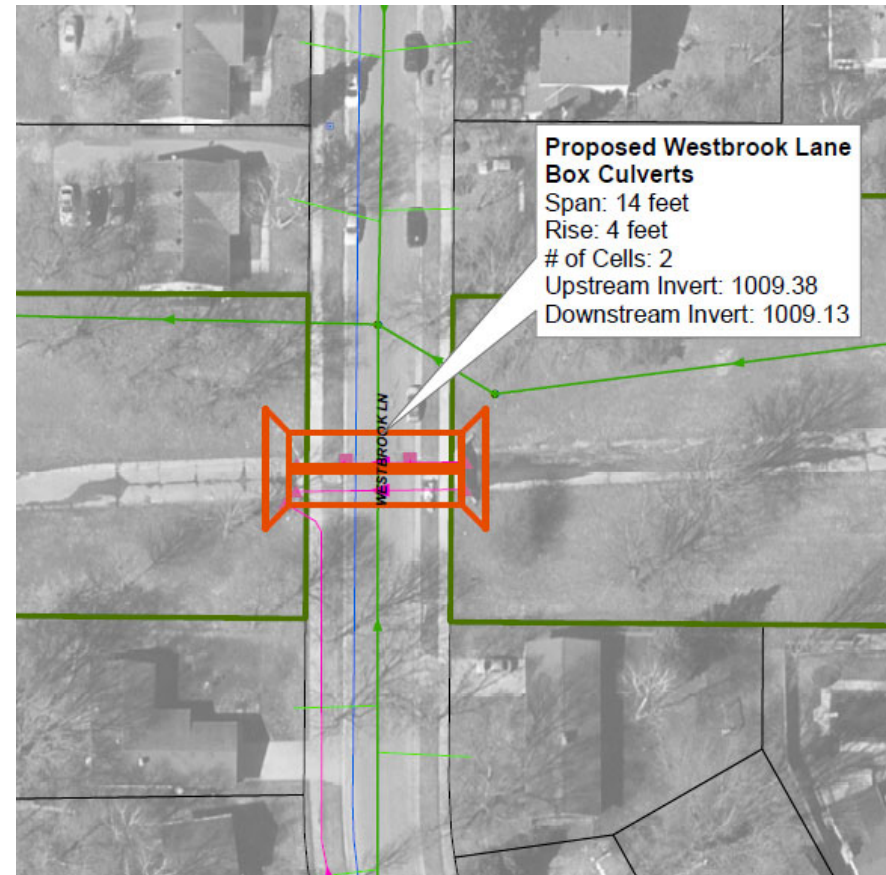


- **Goal: Reduce upstream structure flooding for 4% and 1% chance events**
- Replace existing pipe culverts with box culverts
- Removes 10 structures from flooding for 1% chance event
- Removes 14 structures from flooding for 4% chance event
- Cost estimate = \$1.9 million
- Depends on installation of all downstream culverts = \$4.96 million

# 10. Westbrook Lane Box Culvert Replacement



- **Goal: Convey 1% chance event**
- Replace existing pipe culverts with box culverts
- Removes 1 structure from flooding
- Facilitates upstream improvements without road overtopping or new structure inundation
- Cost estimate = \$630,000

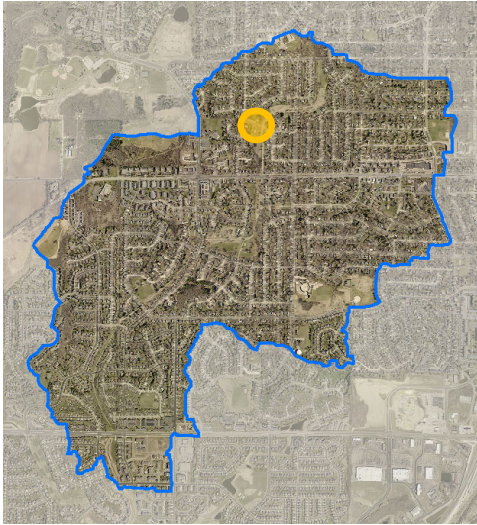


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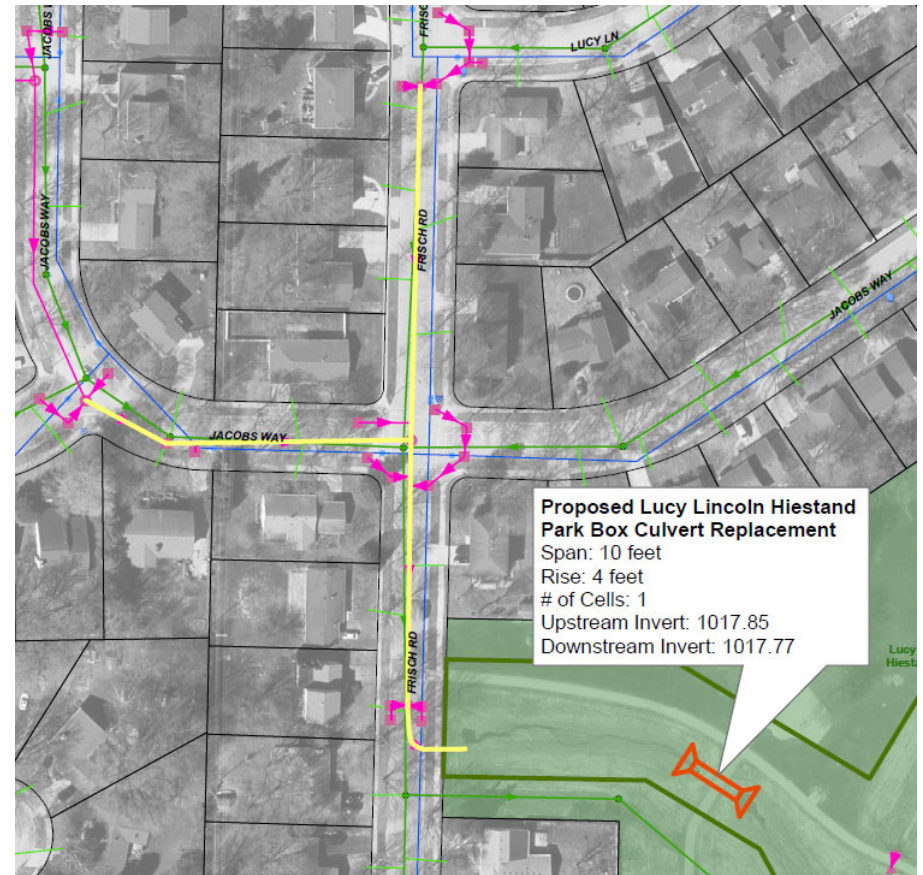




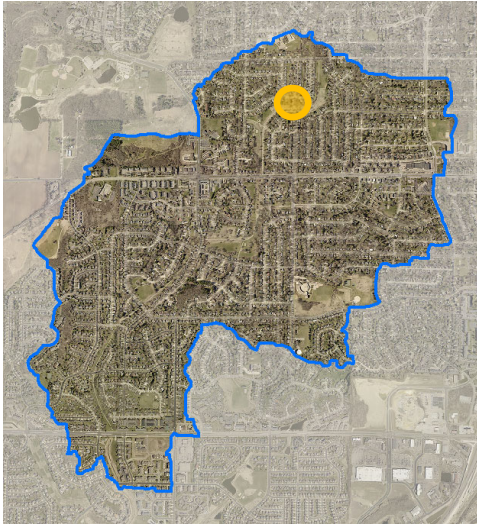
# 11. Lucy Lincoln Hiestand Park Box Culvert Replacement



- **Goal: Convey 1% chance event and reduce flooding during 10%, 4%, and 1% chance events**
- Replace existing pipe culvert with box culvert
- Increase storm sewer size
- Removes 2 structures from flooding
- Meets 10% and 4% chance event targets
- Cost estimate = \$1.1-1.5 million



## 12. Prairie Road Box Culvert & Theresa Terrace Storm Sewer



- **Goal: Convey 1% chance event and reduce flooding during 10%, 4%, and 1% chance events**
- Replace existing pipe culvert with box culvert
- Extend storm sewer and increase pipe size
- Removes 2 structures from flooding
- Meets 10% and 4% chance event targets
- Cost estimate = \$550,000



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# Citywide Prioritization Tool

- City creating prioritization tool to help guide scheduling and budgeting of proposed solutions
  - Will include all flood mitigation solutions in the City (22 watersheds)



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- Solutions prioritized based on:
  - Flood reduction abilities
  - Racial Equity and Social Justice
  - Ability to improve emergency service access
  - Cost/available funding sources (water quality grant funding)
  - Co-benefits to other City facilities (streets, etc.)



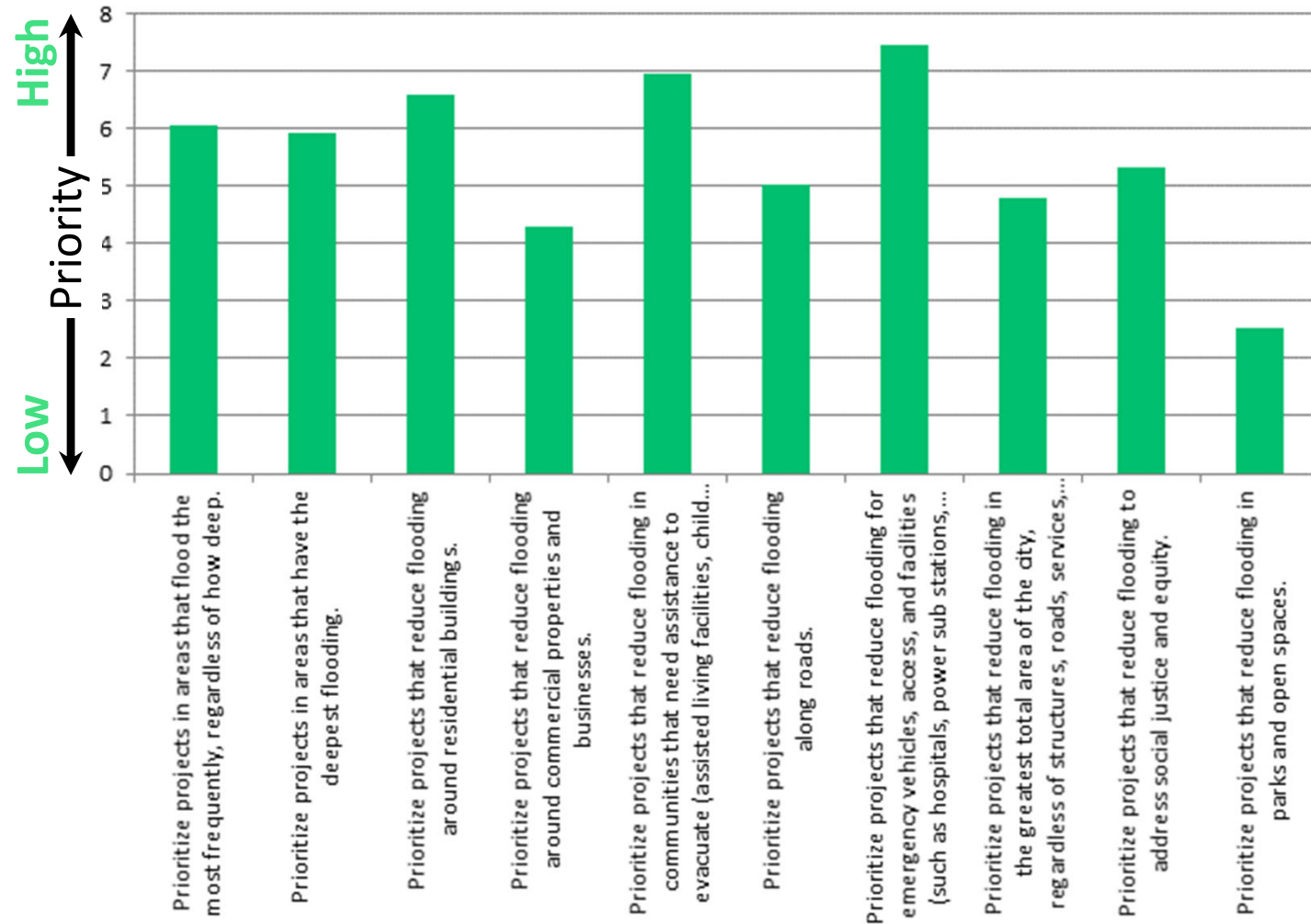


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  - Cost/available funding sources (water quality grant funding)
  - Co-benefits to other City facilities (streets, etc.)
- See survey to provide input on how solutions are prioritized



# Current Prioritization Survey Results



If you haven't, please take the survey.

A link can be found on the East Badger Mill Creek Project Webpage

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# Why aren't all targets met for the watershed?

- Space constraints
- Lack of topographic relief
- Conflict with other major utilities (*e.g. gas mains, sanitary sewer mains*)
- Property ownership
- Cost impacts
- Adverse downstream impacts
- Potential resistance to recommended solutions



# Next Steps

- Finalize draft report
- Post draft final report for 30-day public comment period
- Finalize report
- Finalize project prioritization process
- Budget for projects
- Once included in budget, begin design process and project-specific outreach



# Budgeting Considerations

- Not all projects are yet identified throughout the City
  - Currently identified approximately 50 projects in 5 watersheds totaling \$150 million (22 watersheds will be studied citywide)



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  - Without additional funding sources, only 1-2 medium to large projects can be completed in a year



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  - Avoid double digit rate increases – not sustainable
  - Without additional funding sources, only 1-2 medium to large projects can be completed in a year
- Must identify additional funding mechanisms
  - Grants, appropriations, earmark funds
- Most projects take 1 ½ – 2 years to design & permit before they can be constructed





# Contact Information & Resources

- Project Manager: Matt Allie, [mallie@cityofmadison.com](mailto:mallie@cityofmadison.com)
  
- Public Information Officer: Hannah Mohelnitzky, [hmoelnitzky@cityofmadison.com](mailto:hmoelnitzky@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
  - Learn ways to protect your property from flooding with on-site fixes
  
- New Flooding Website: [www.cityofmadison.com/flooding](http://www.cityofmadison.com/flooding)
- Everyday Engineering Podcast
- Facebook – City of Madison Engineering
- Twitter – @MadisonEngr
- Provide your feedback! <https://www.cityofmadison.com/news/survey-open-city-engineering-works-to-prioritize-flood-projects>



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# Zoom Breakout Rooms

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- Join a Zoom Breakout Room Session
  - Window will pop up where you can select which group you'd like to join
  - If a window doesn't pop up, look for a button on the bottom that says "Breakout Rooms." Click the button and room options will appear.

# Breakout Groups

1. Alder District 7 – led by Greg Fries
2. Alder District 20 – led by Matt Allie
3. Alder District 10 – led by Caroline Burger

