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

CITY OF MADISON

Spring Harbor Watershed Study Public Information Meeting No. 3

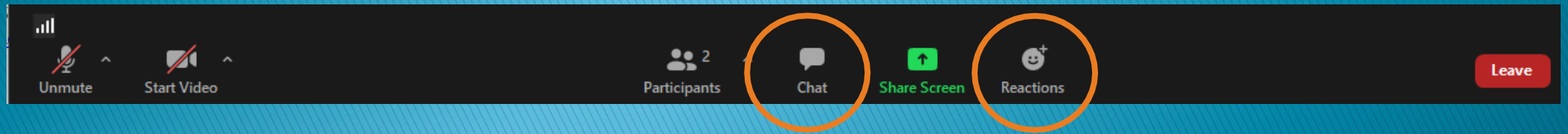
by City of Madison Engineering Division

June 30, 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.

- ✓ This meeting will be **recorded** and posted to the City's project page.
- ✓ All attendees should stay **muted** to keep background noise to a minimum.
- ✓ You may use the **"raise hand"** option at the bottom, under "**reactions**" if you have something that requires immediate clarification.
- ✓ Use **"chat"** option to type your questions, or if you are having technical issues and a staff person can try to assist.
- ✓ Questions will be answered at the end of the presentation. Inappropriate questions may be dismissed.
- ✓ If you cannot ask your question via typing, please use the "raise hand" option and you will be unmuted when it is your turn.



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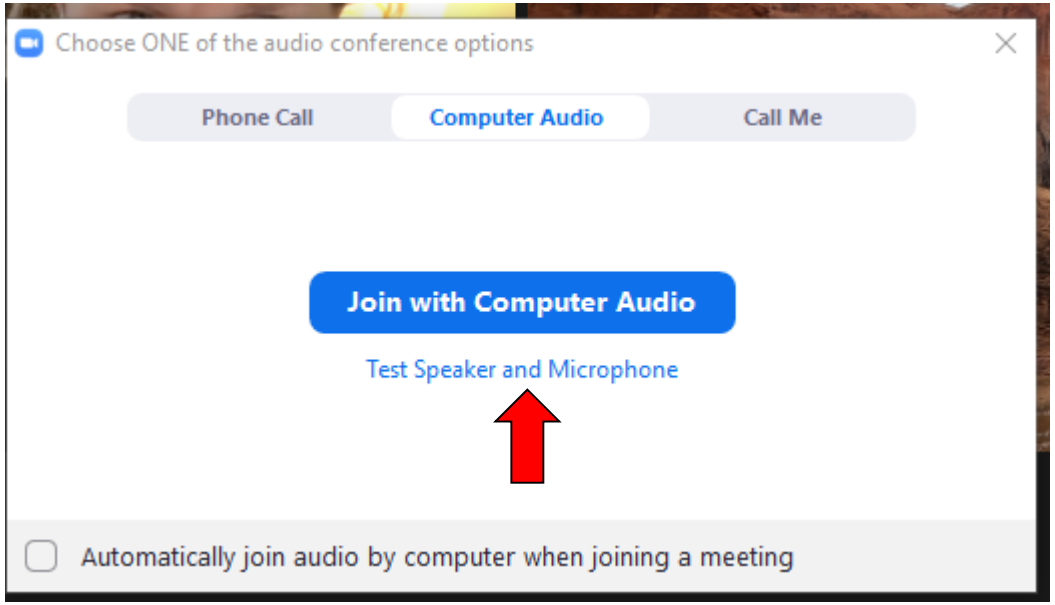
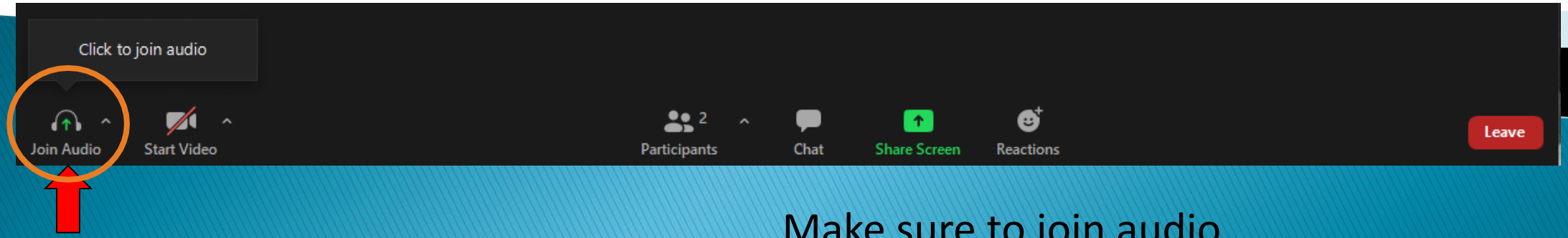
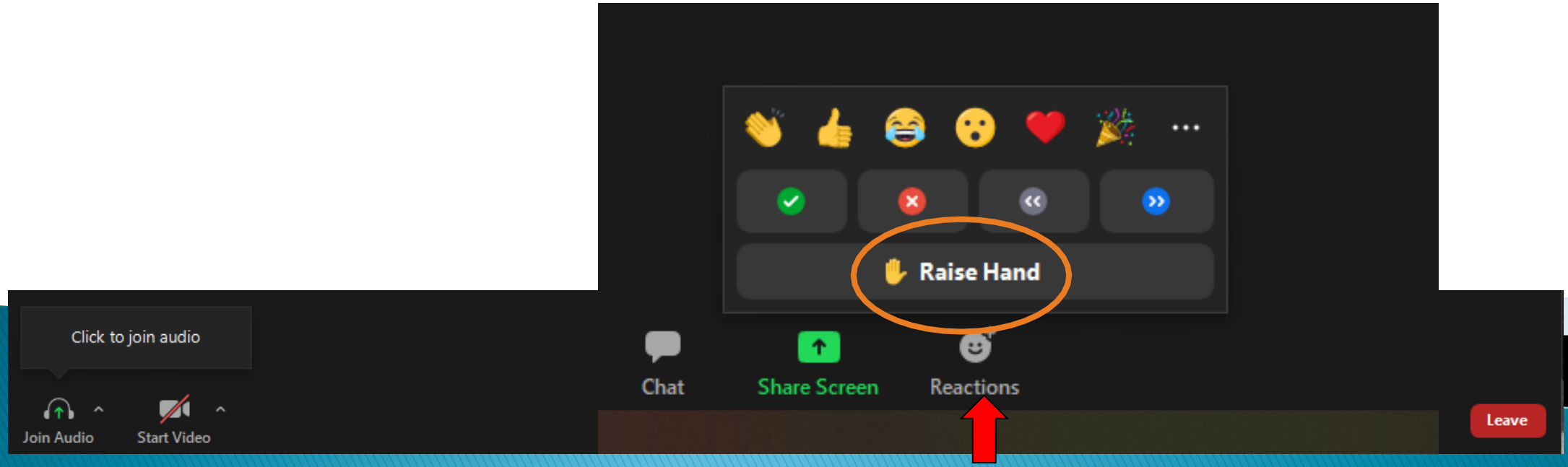
How to Participate





Make sure to join audio

How to Participate



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

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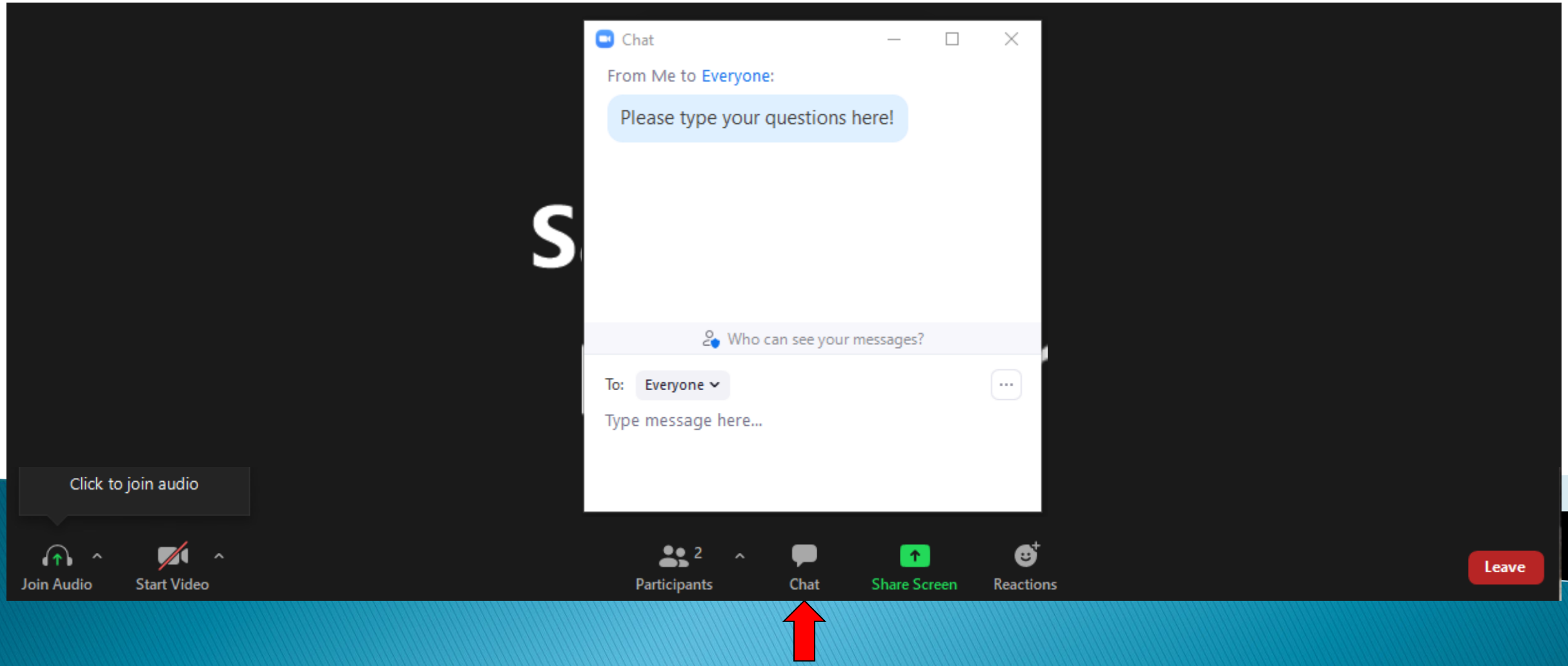
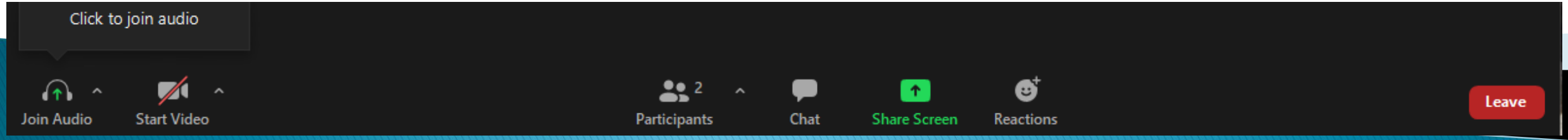


Use chat if you have technical issues or a question for the panelists

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 (AE2S, 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 to Focus Groups (City of Madison staff)
  - An option to join breakout groups will appear on your screen

Presentation Overview

- Definitions of commonly used terms
- Study location
- Watershed study schedule
- Flood mitigation goals
- Inundation mapping
- Proposed solutions development process
- Proposed solutions
  - Standalone projects
  - Local storm sewer
- Implementation and cost
- Why aren't all flood targets met?
- Next steps

Definitions of commonly used terms

- **Stormwater**: rainwater produced from a rain event

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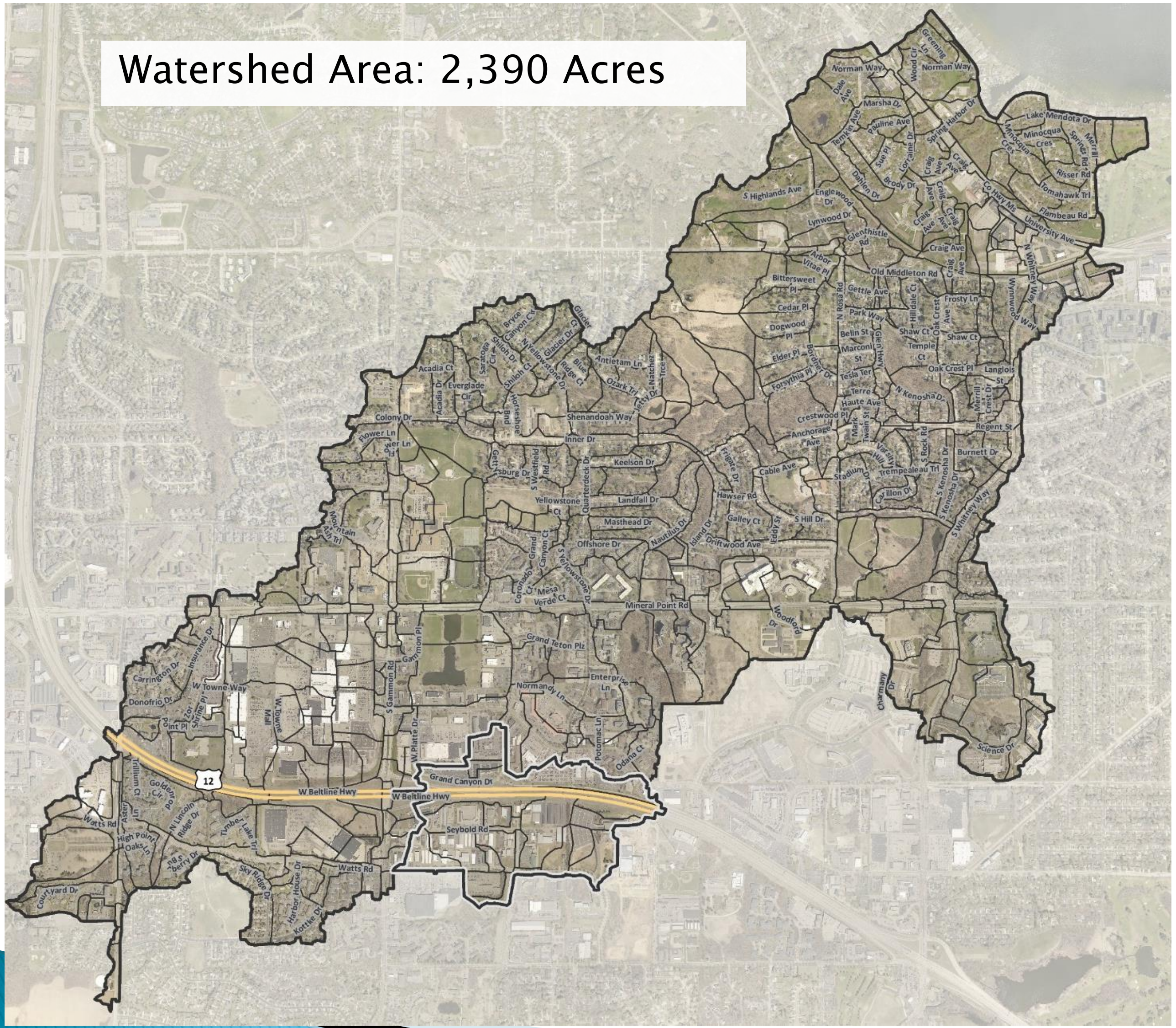
- **Local Sewer Projects**: storm sewer that is reconstructed with another already-scheduled project – typically street reconstruction
- **Stand-alone Projects**: Flood mitigation projects that will be constructed on their own – not tied to another already-scheduled project

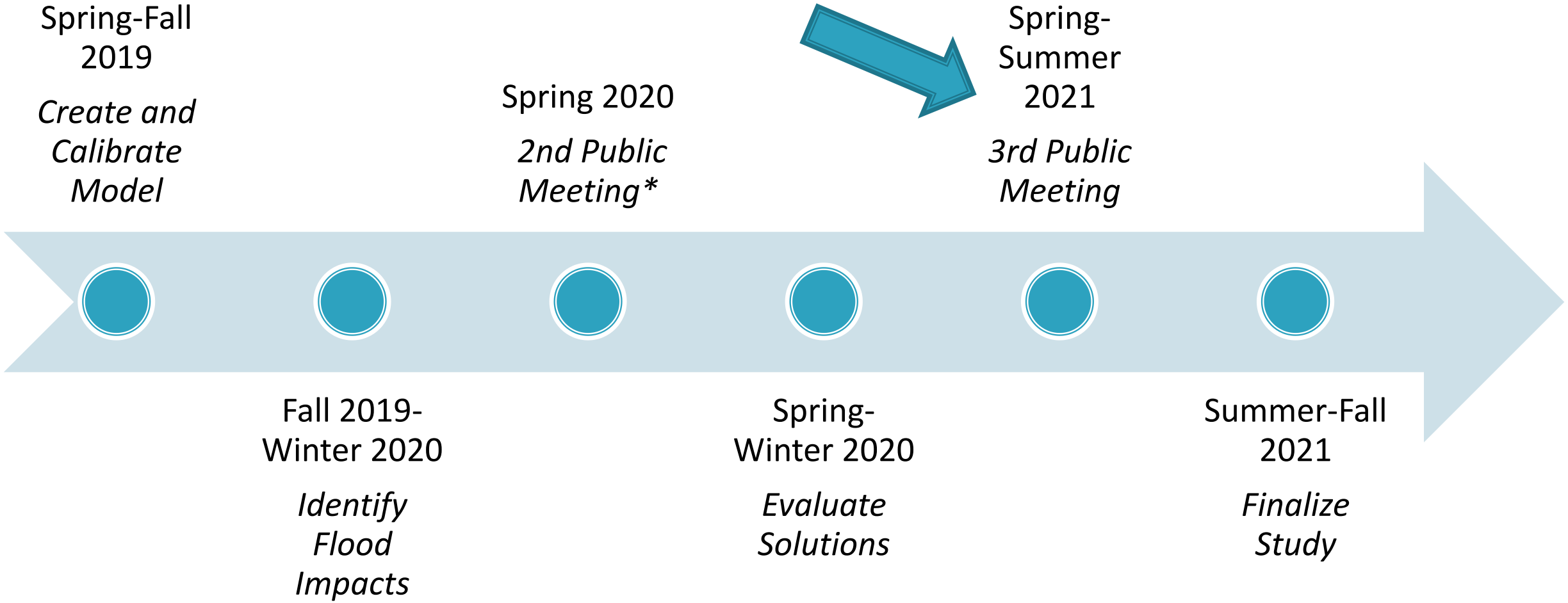
Project Location



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

This is the Spring Harbor Watershed in the City of Madison.

Schedule



*Presentations from PIM1 and PIM 2 can be found on the Watershed Study Website

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Flood Mitigation Goals for First 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 Goals for First Watershed Studies

- 10% Chance Event (4.09” rain/24 hours)
- 4% Chance Event (5.01” rain/24 hours)
  - 0.2’ at Centerline of Road (roads passable for emergency vehicles)

Flood Mitigation Goals for First Watershed Studies

- 10% Chance Event (4.09” rain/24 hours)
- 4% Chance Event (5.01” 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 Goals for First Watershed Studies

- 10% Chance Event (4.09” rain/24 hours)
- 4% Chance Event (5.01” rain/24 hours)
- 1% Chance Event (6.66” rain/24 hours)
- 0.2% Chance Event (8.81” rain/24 hours)
  - Safe conveyance of overflow

Flood Mitigation Goals for First Watershed Studies

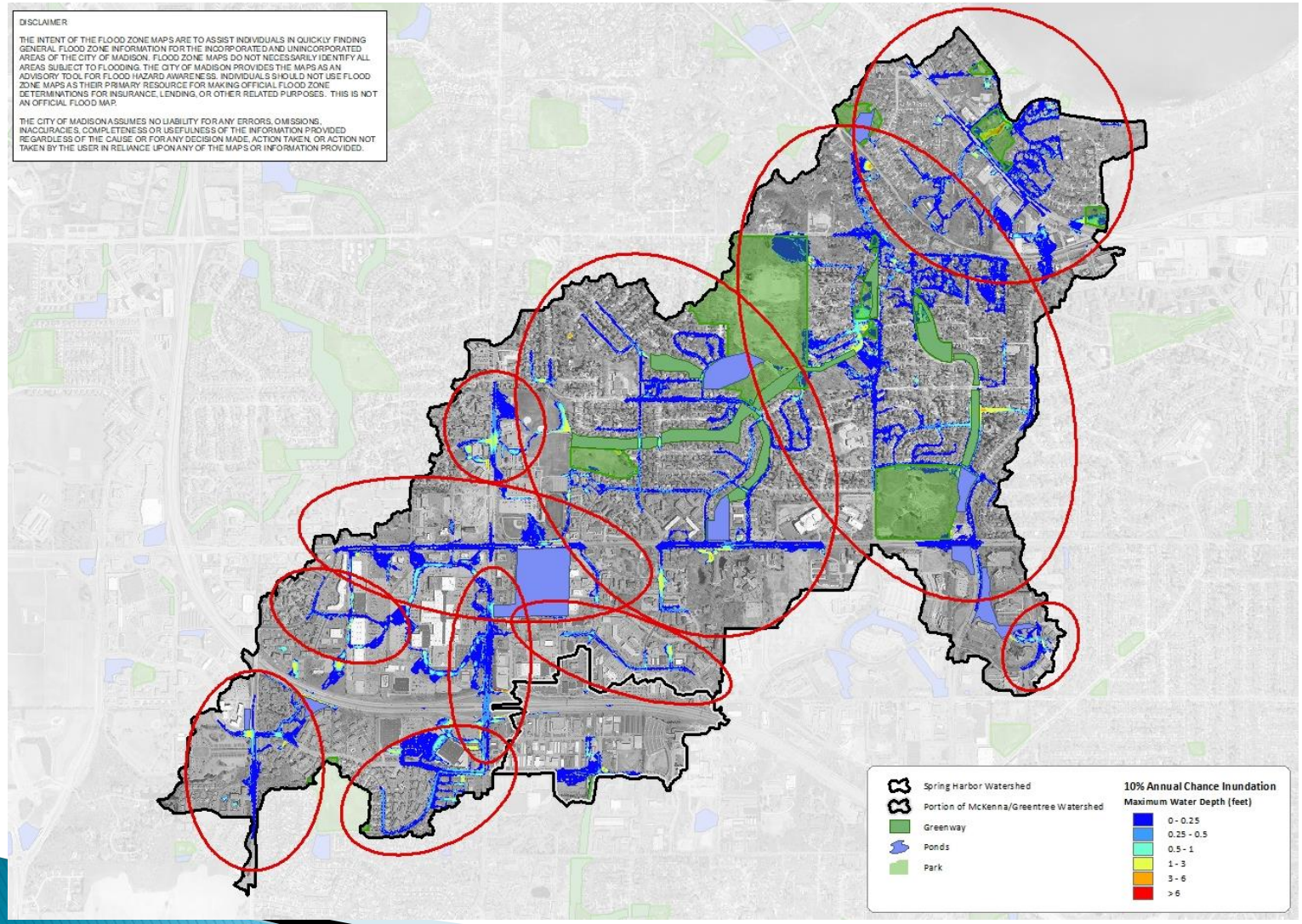
- Not all goals may be met for all areas of the watershed
  - Problems are complex – mitigating factors discussed later in the presentation
  - For the Spring Harbor watershed with the proposed solutions, goals were met in most of the watershed

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.

10% Chance Existing Inundation Mapping



- 25.2 miles of street do not meet 10% goal
- Locations where 10% chance goals are not met

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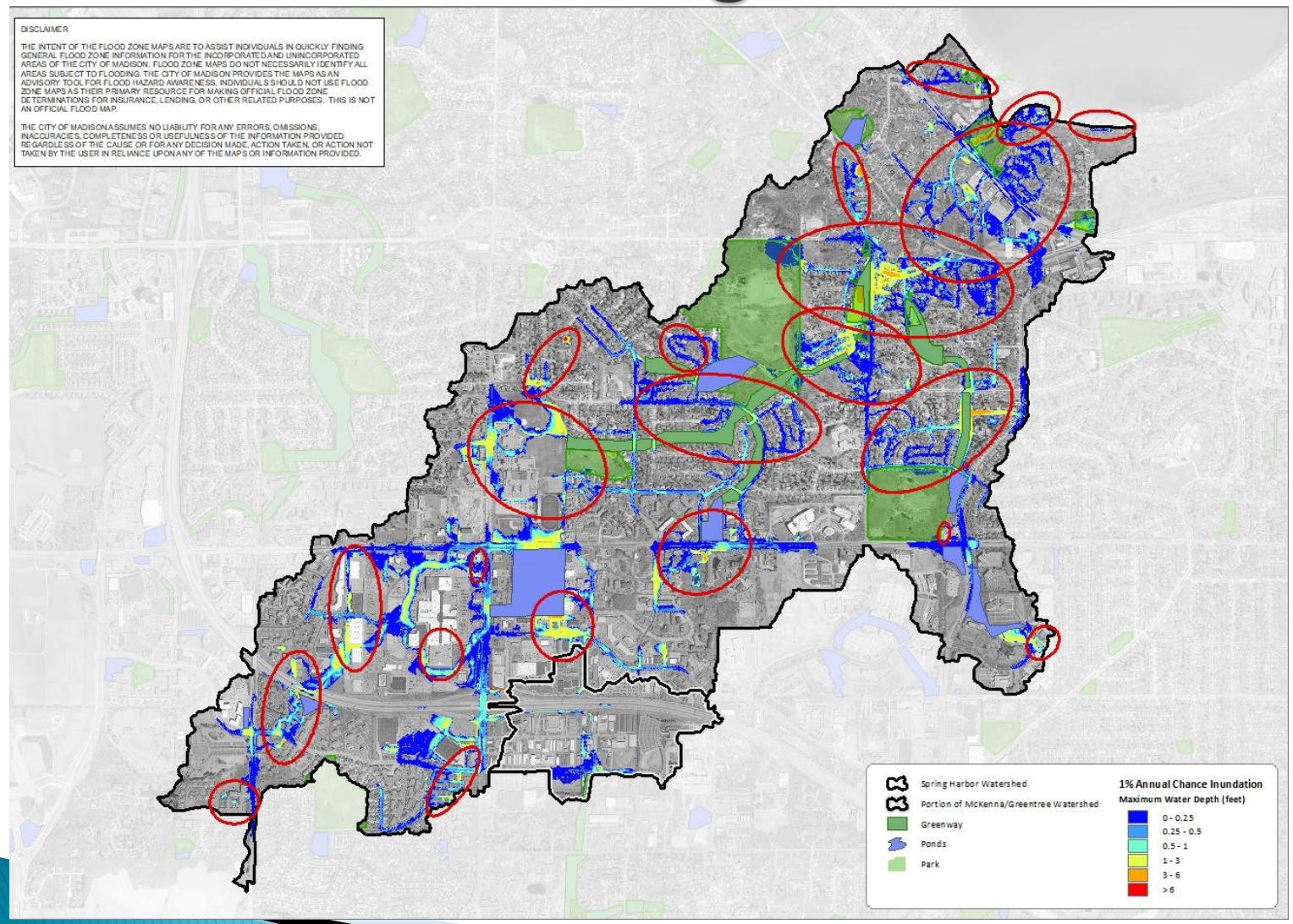
1% Chance Existing Inundation Mapping



- 351 structures flooded in existing conditions
- Locations where 1% chance goals are not met

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Proposed Solutions Process

- Iterative process
  - Brainstormed solutions
  - Consultant analyzed ideas and provided results
  - Some solutions not found to be viable for various reasons
  - Several meetings to develop the “suite of solutions”

Proposed Solutions Process

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

Proposed Solutions Process

- Iterative process
- Met with City Agencies for feedback
- Revised solutions based on agency feedback

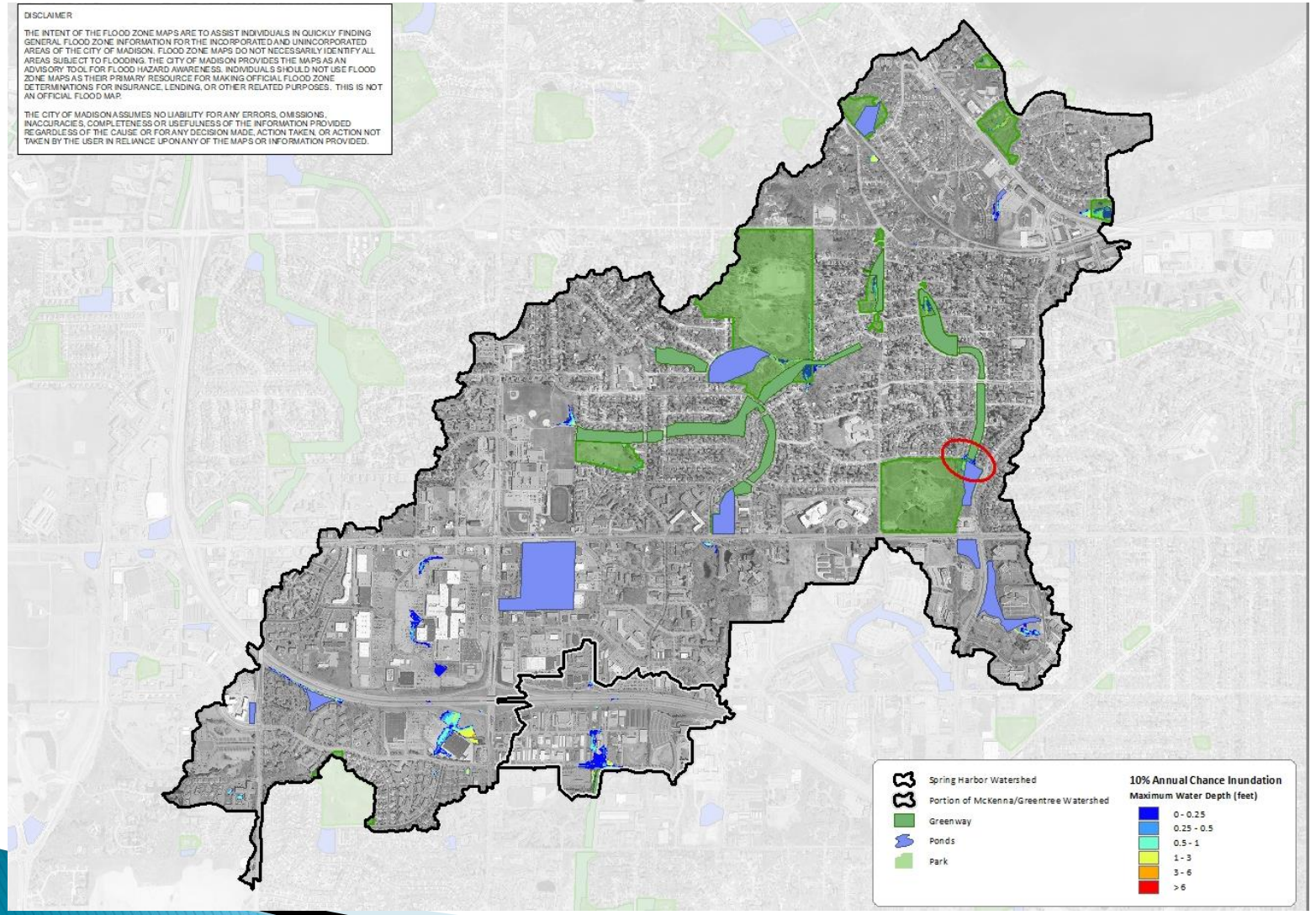
Proposed Solutions Process

- Iterative process
- Met with City Agencies for feedback
- Revised solutions based on agency feedback
- Met with the Alders for each district

Proposed Solutions Process

- Iterative process
- Met with City Agencies for feedback
- Revised solutions based on agency feedback
- Met with the Alders for each district
- Meeting with you tonight

10% Chance Proposed Inundation Mapping



- 25.1 miles of additional streets now meet 10% goal
- Locations where 10% chance goals were not met in proposed conditions

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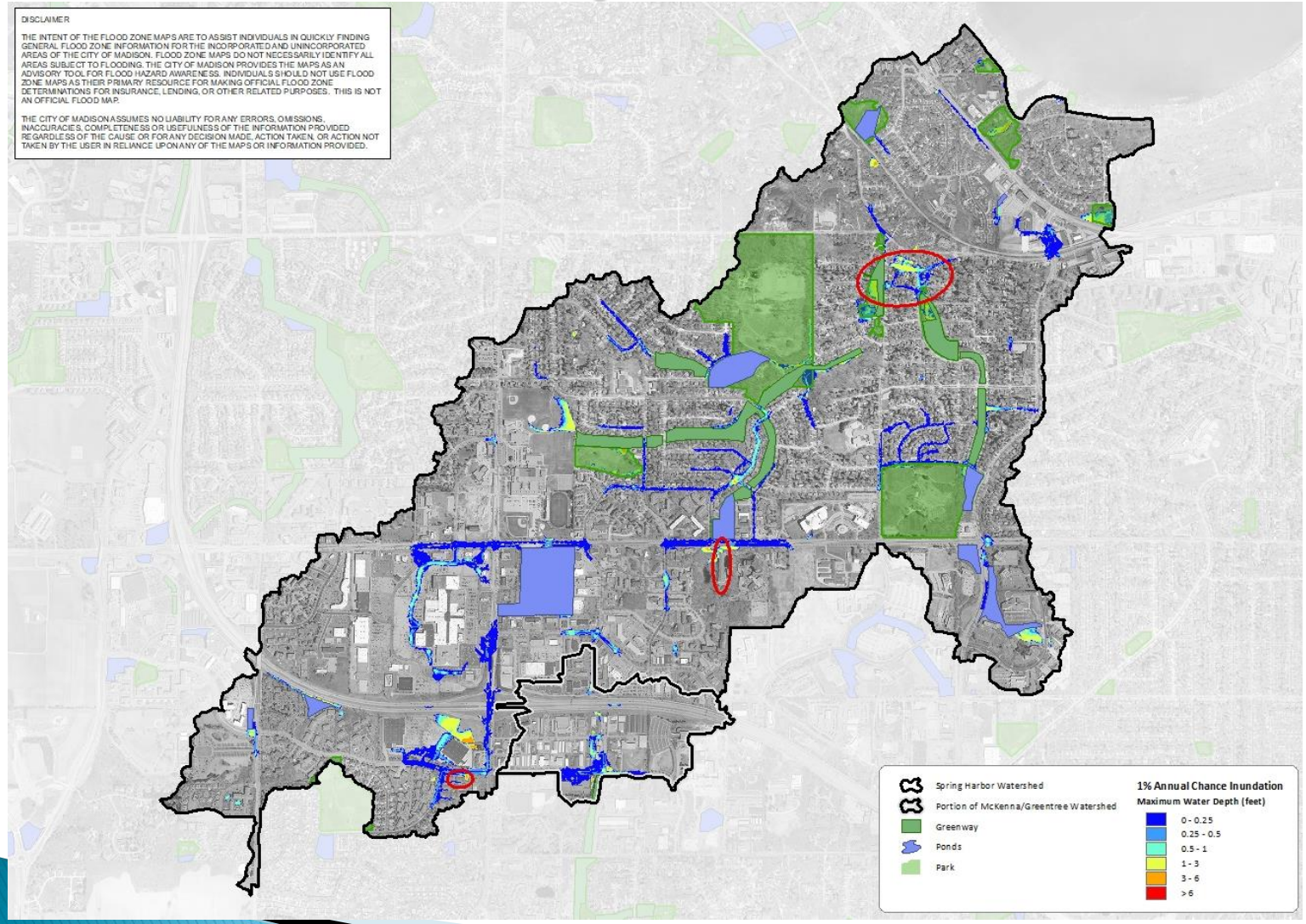
1% Chance Proposed Inundation Mapping



- 334 structures now meet 1% chance storm goal
- Locations where 1% chance goals were not met in proposed conditions

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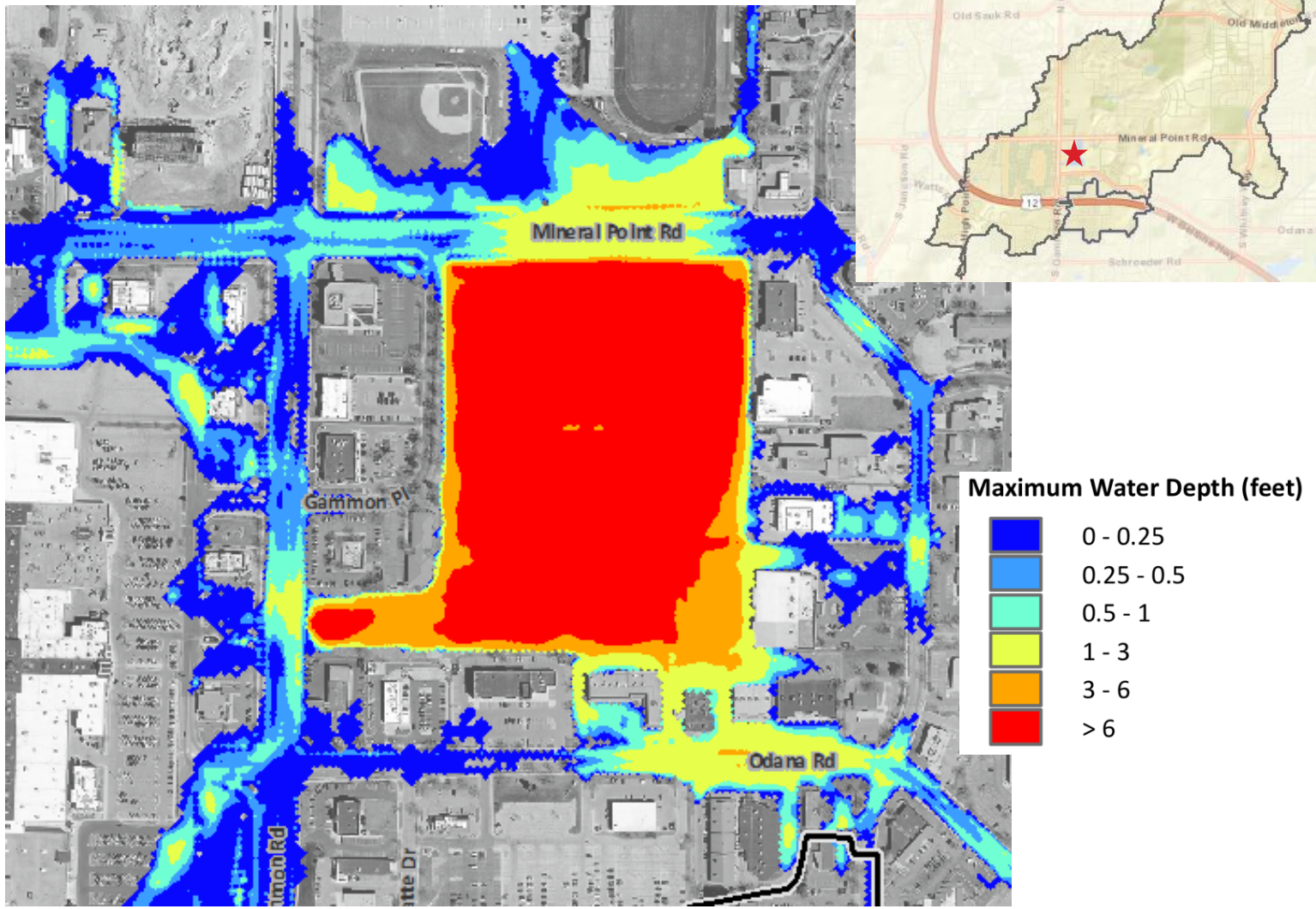
Proposed Solutions

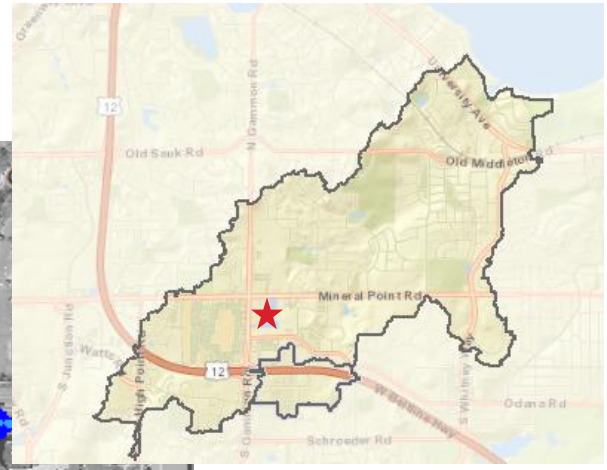
1. West Towne Pond
2. Kenosha Greenway
3. Glen Oak Hills Park Greenway
4. Gettle Avenue Storm Sewer
5. Owen Park Channel and Floodwall
6. Masthead Greenway Ponds
7. Greenway Crossings
8. Local Storm Sewer Improvements

West Towne Pond

Flooding Issues

- 1% chance inundation of structures in SE corner
- Mineral Point Road and Odana Road impassible





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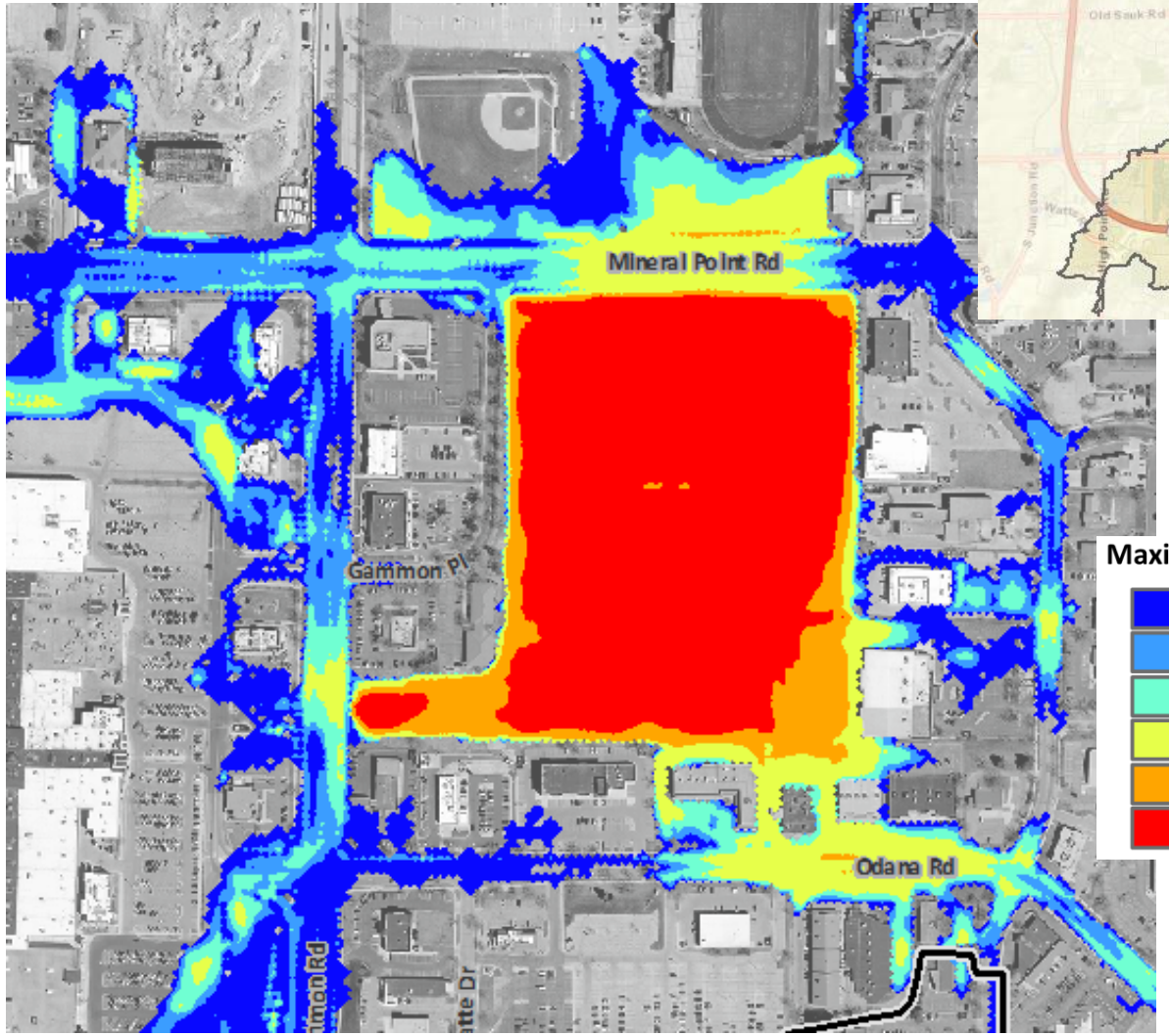
West Towne Pond

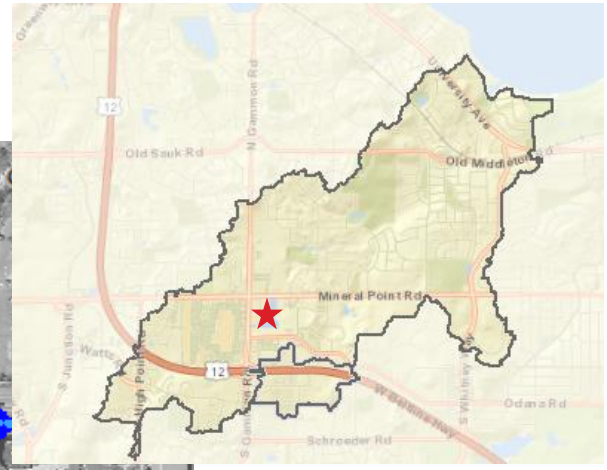
Flooding Issues

- 1% chance inundation of structures in SE corner
- Mineral Point Road and Odana Road impassible

Objective

- Eliminate 1% chance structure flooding
- Reduce flooding on Mineral Point / Odana





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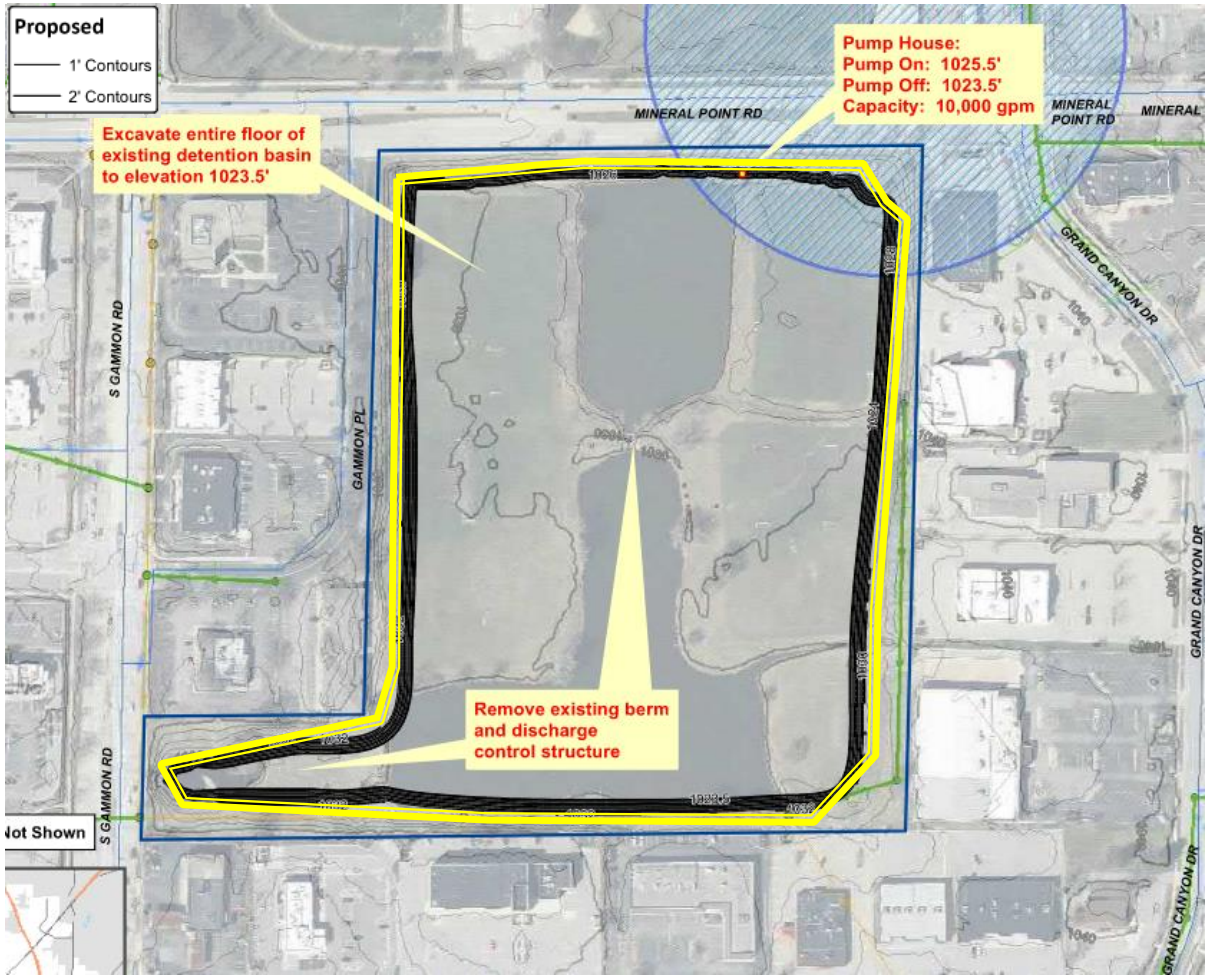
West Towne Pond

Proposed Improvements

- Excavate existing soccer field area down ~7’ to make room for additional flood water storage
- Combine current three “ponds” into a single large pond

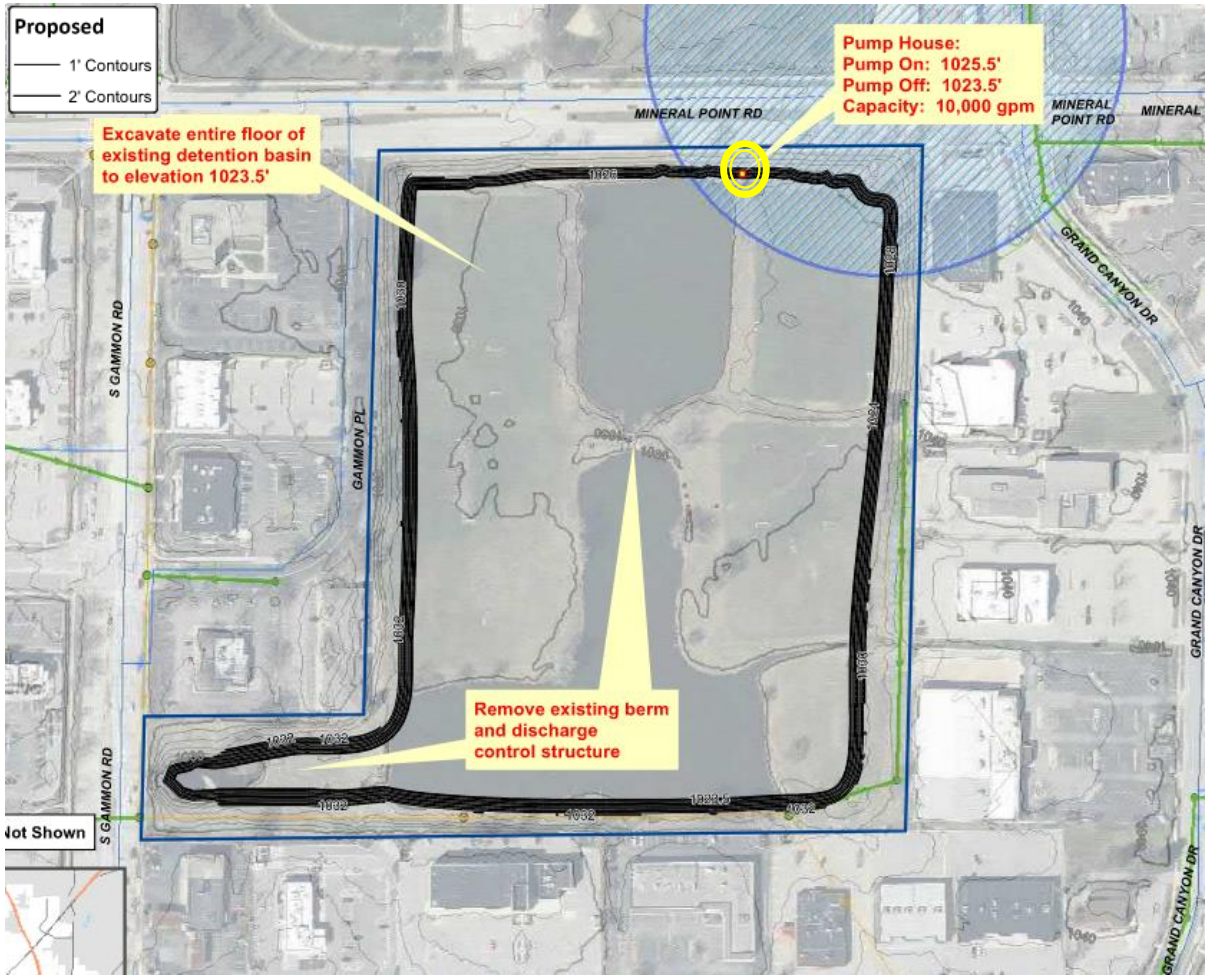


CITY OF MADISON

West Towne Pond

Proposed Improvements

- Excavate existing soccer field area down ~7’ to make room for additional flood water storage
- Combine current three “ponds” into a single large pond
- Lower normal pool 2.0’ by using a small pump house (10,200 Gpm/1-day drawdown)
- Pump house discharges to existing gravity outlet



CITY OF MADISON

West Towne Pond

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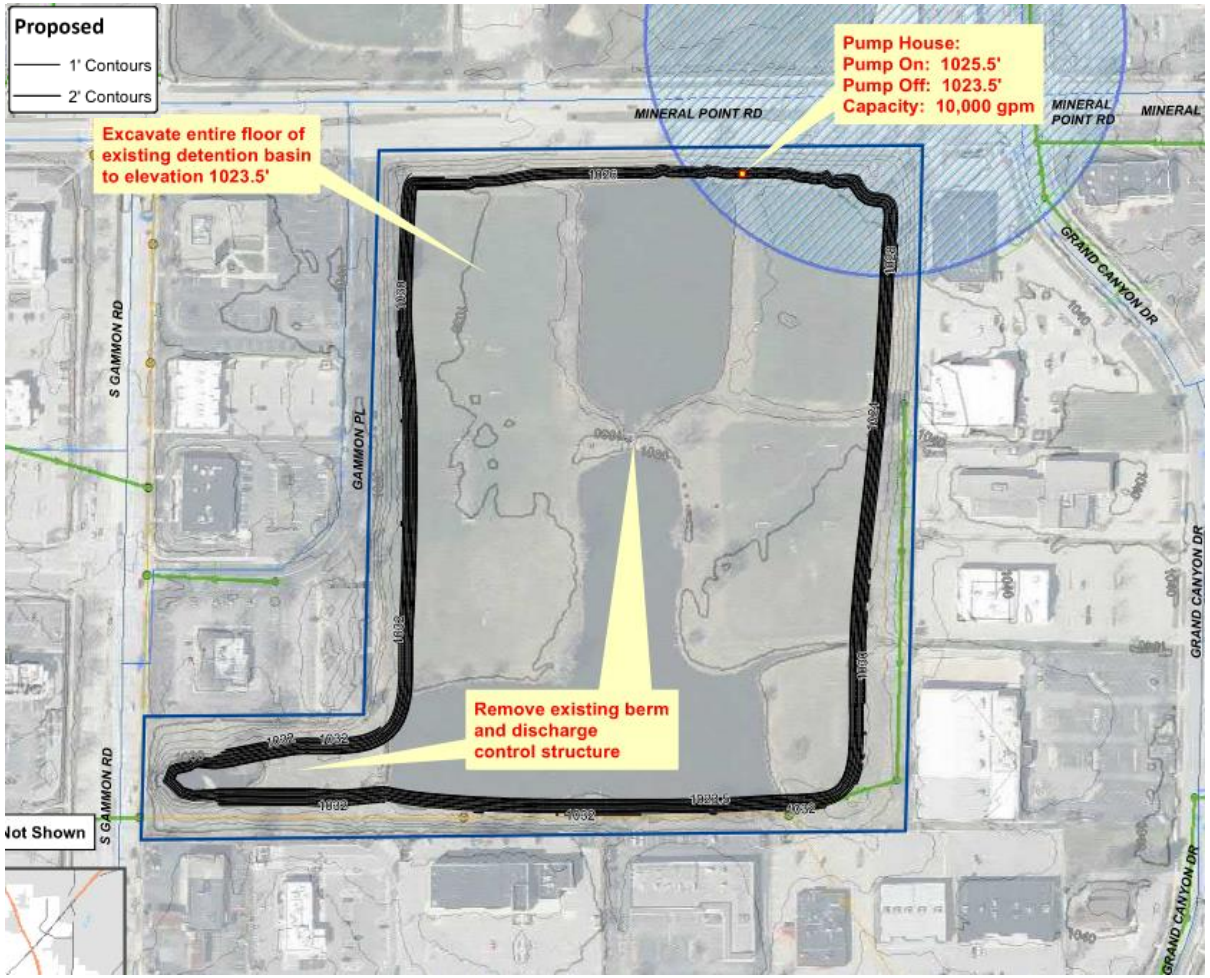
- Combine current three “ponds” into a single large pond
- Lower normal pool 2.0’ by using a small pump house (10,200 Gpm/1-day drawdown)
- Pump house discharges to existing gravity outlet
- **Proposed pond improvements do not add to downstream flooding issues**



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West Towne Pond

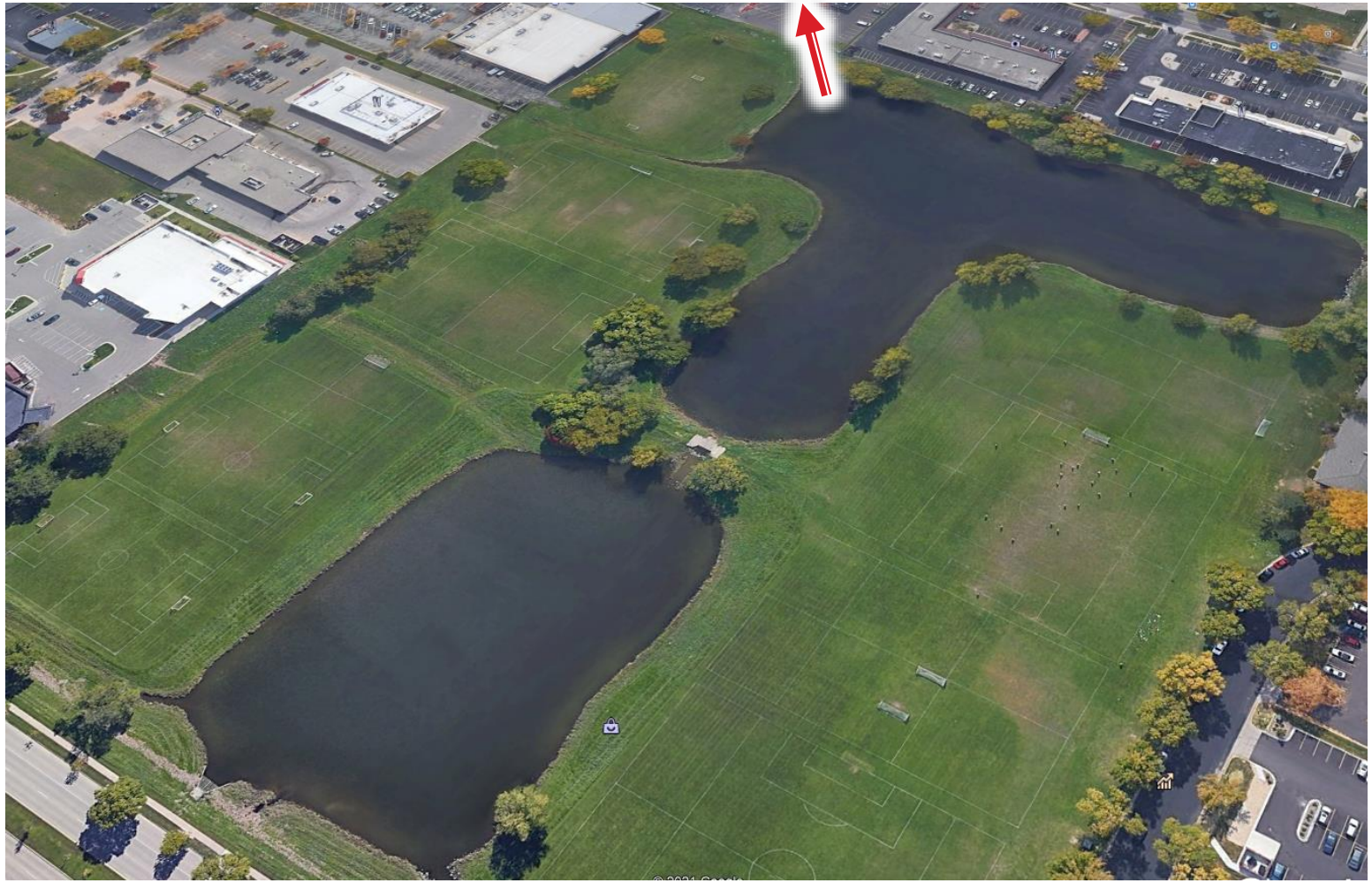
Challenges / Alternatives Considered but Eliminated

- Increased outlet capacity north
  - Cost and impact downstream

West Towne Pond

Challenges / Alternatives Considered but Eliminated

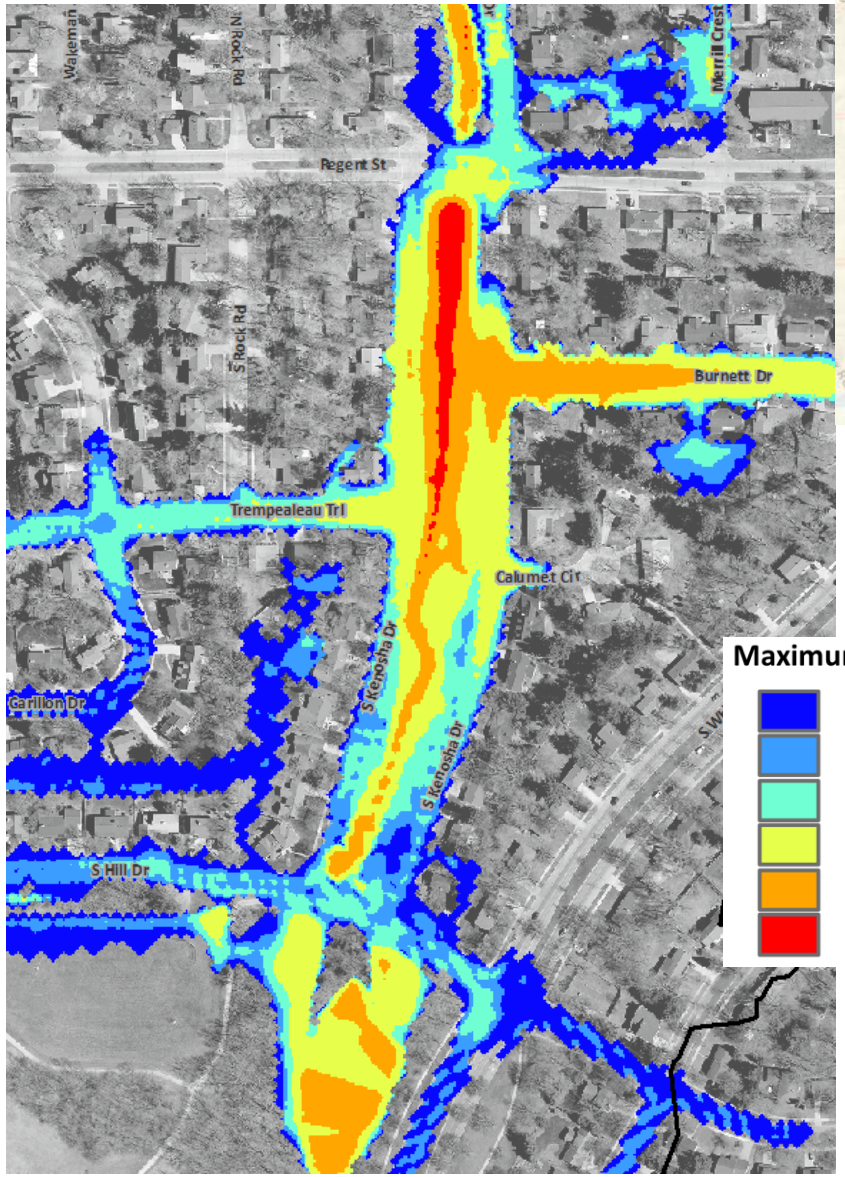
- Increased outlet capacity north
- Increased outlet capacity south
  - Implications to existing flooding in McKenna / Greentree Watershed

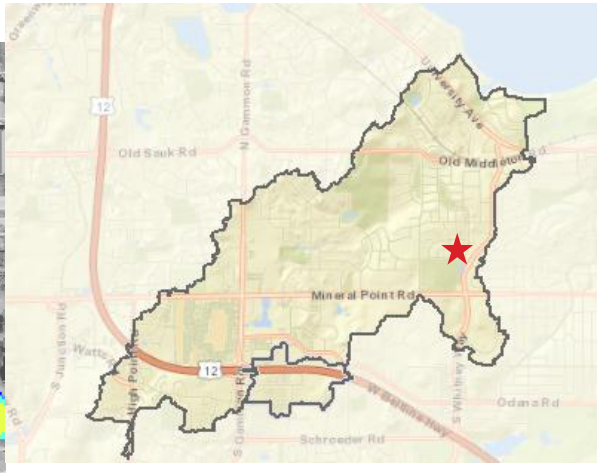


Kenosha Greenway

Flooding Issues

- Overtopping of Regent Street in 1% chance event.
- Inundation of structures on Burnette Drive in 1% chance event.





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Kenosha Greenway

Flooding Issues

- Overtopping of Regent Street in 1% chance event.
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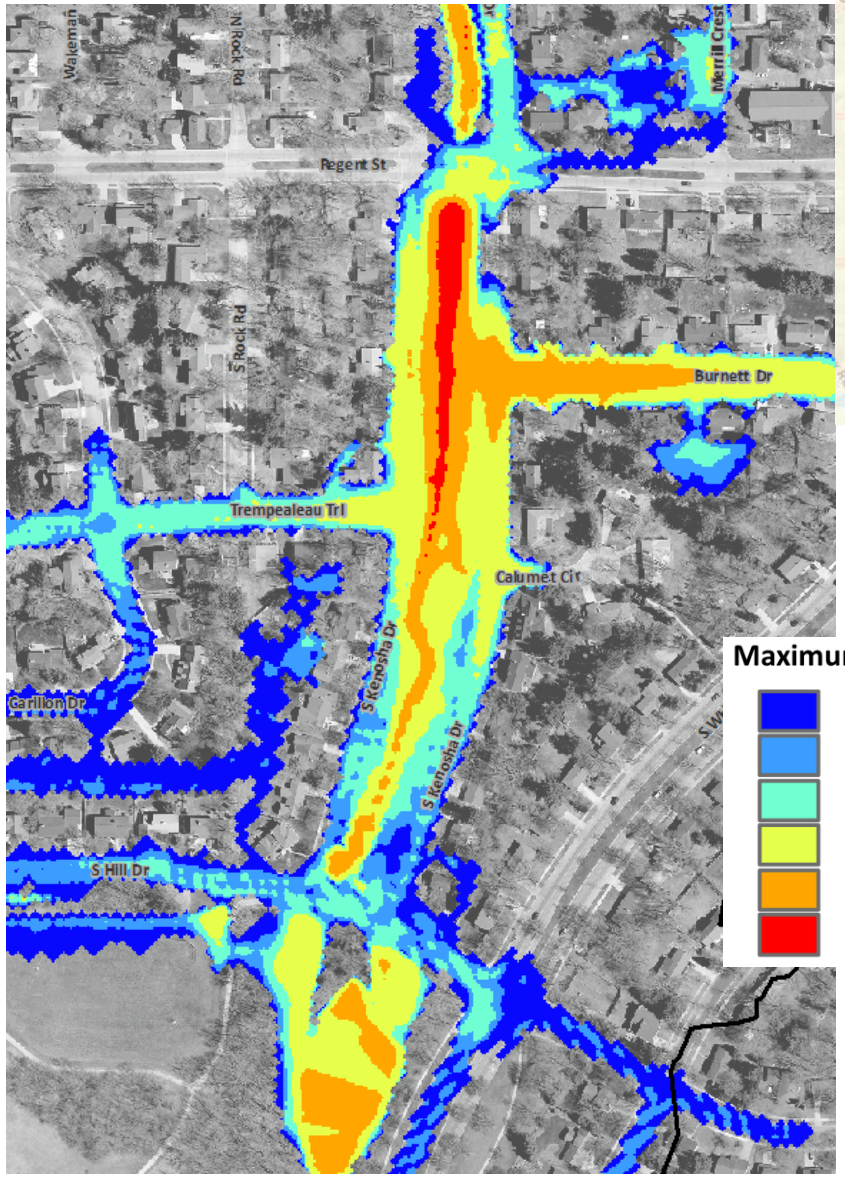
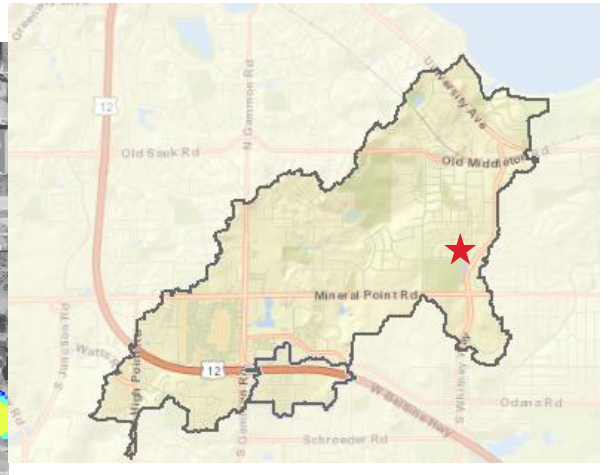
Objective

- Eliminate overtopping of Regent Street in 1% chance event.
- Eliminate 1% chance structure flooding.





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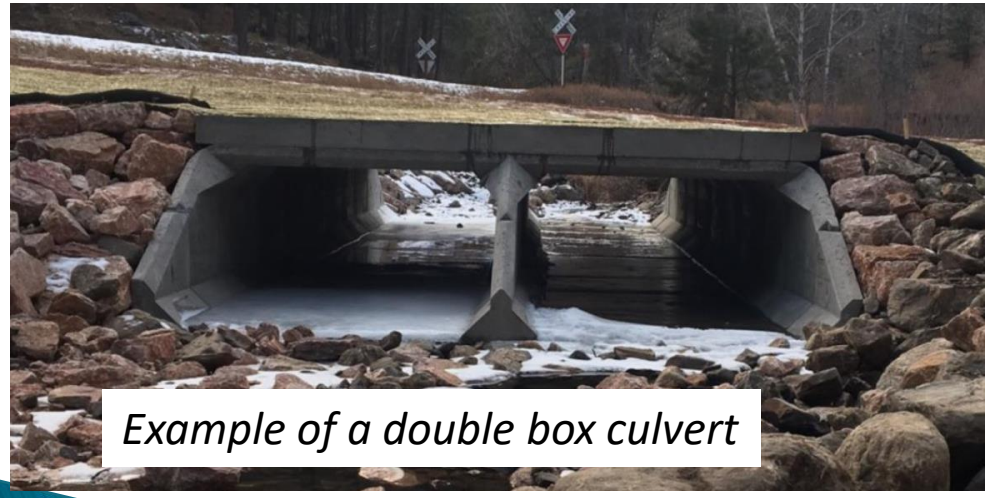
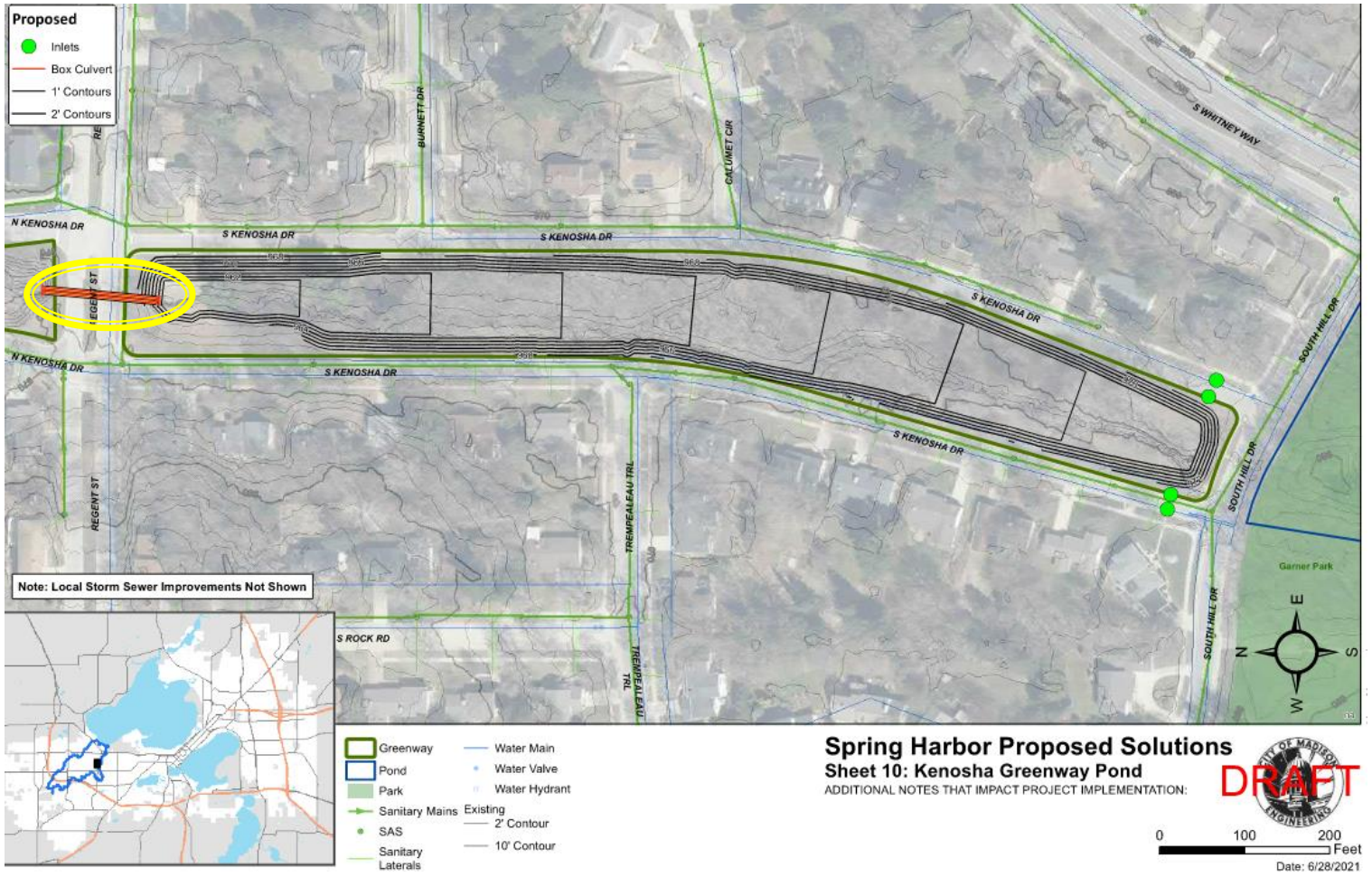
Kenosha Greenway/ Regent Street Culvert

Proposed Improvements

- Increase Regent Street crossing to 6’x5’ double box culvert to reduce backwater to local storm sewer



Example of a double box culvert



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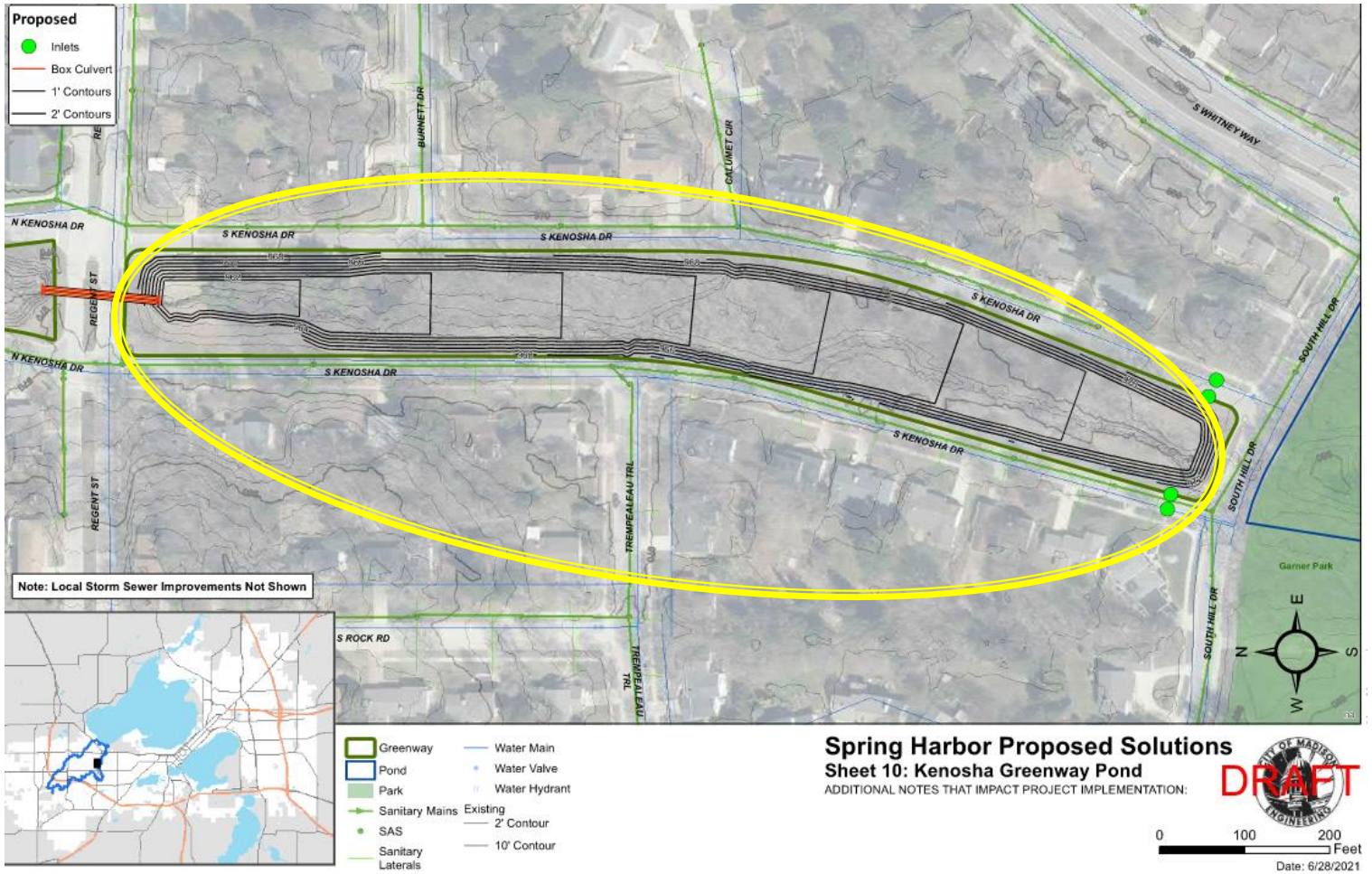
Kenosha Greenway/ Regent Street Culvert

Proposed Improvements

- Increase Regent Street crossing to 6’x5’ double box culvert to reduce backwater to local storm sewer
- Excavate Kenosha Greenway to increase storage with further reduces tailwater elevations



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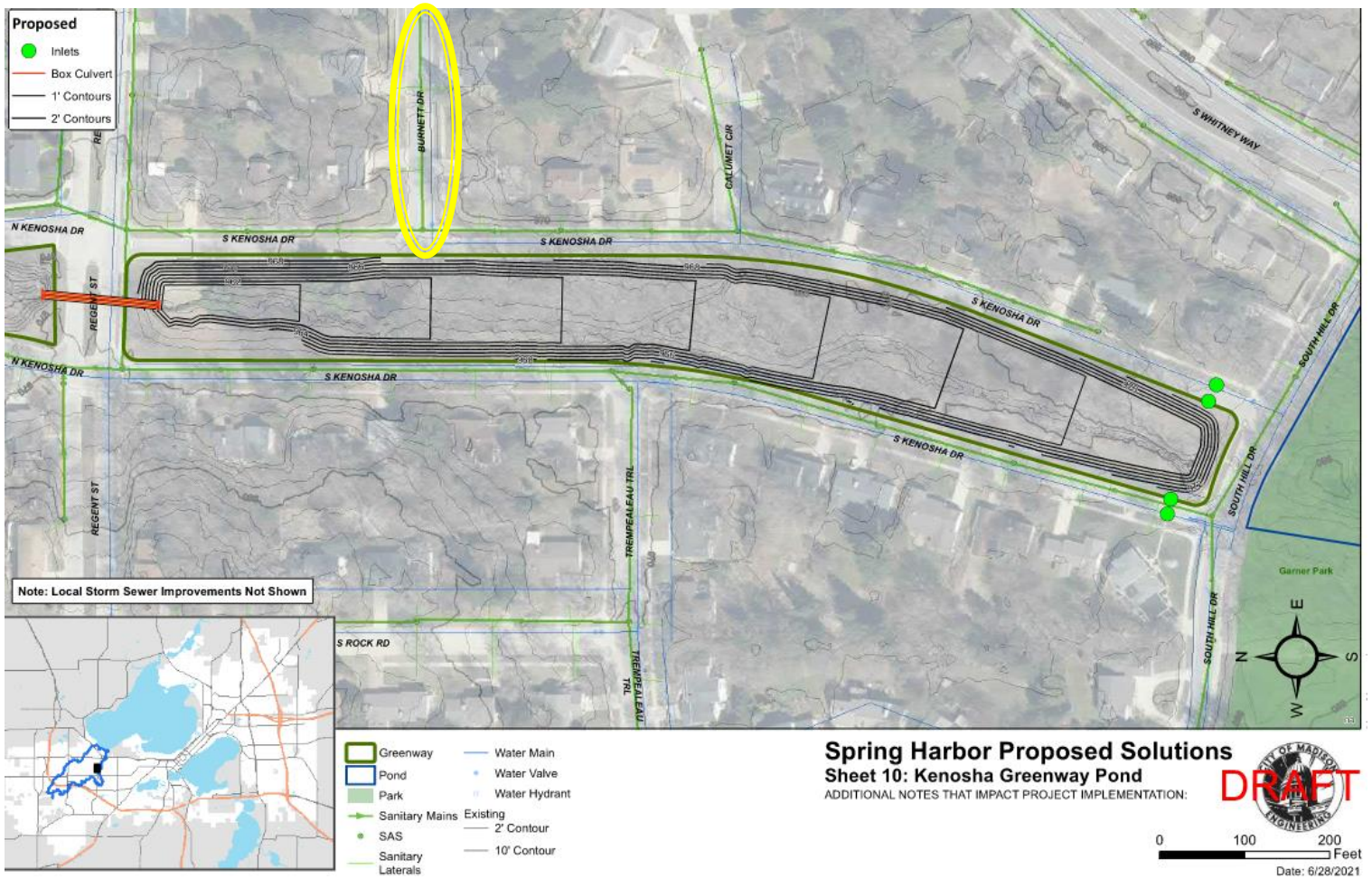
Kenosha Greenway/ Regent Street Culvert

Proposed Improvements

- Increase Regent Street crossing to 6’x5’ double box culvert to reduce backwater to local storm sewer
- Excavate Kenosha Greenway to increase storage with further reduces tailwater elevations
- Increase size of local storm sewers to reduce street flooding



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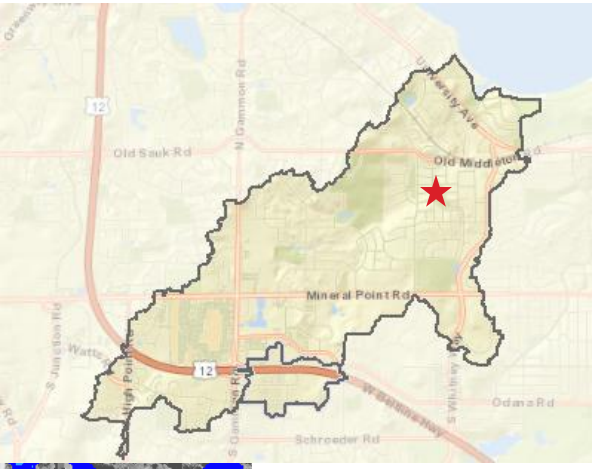
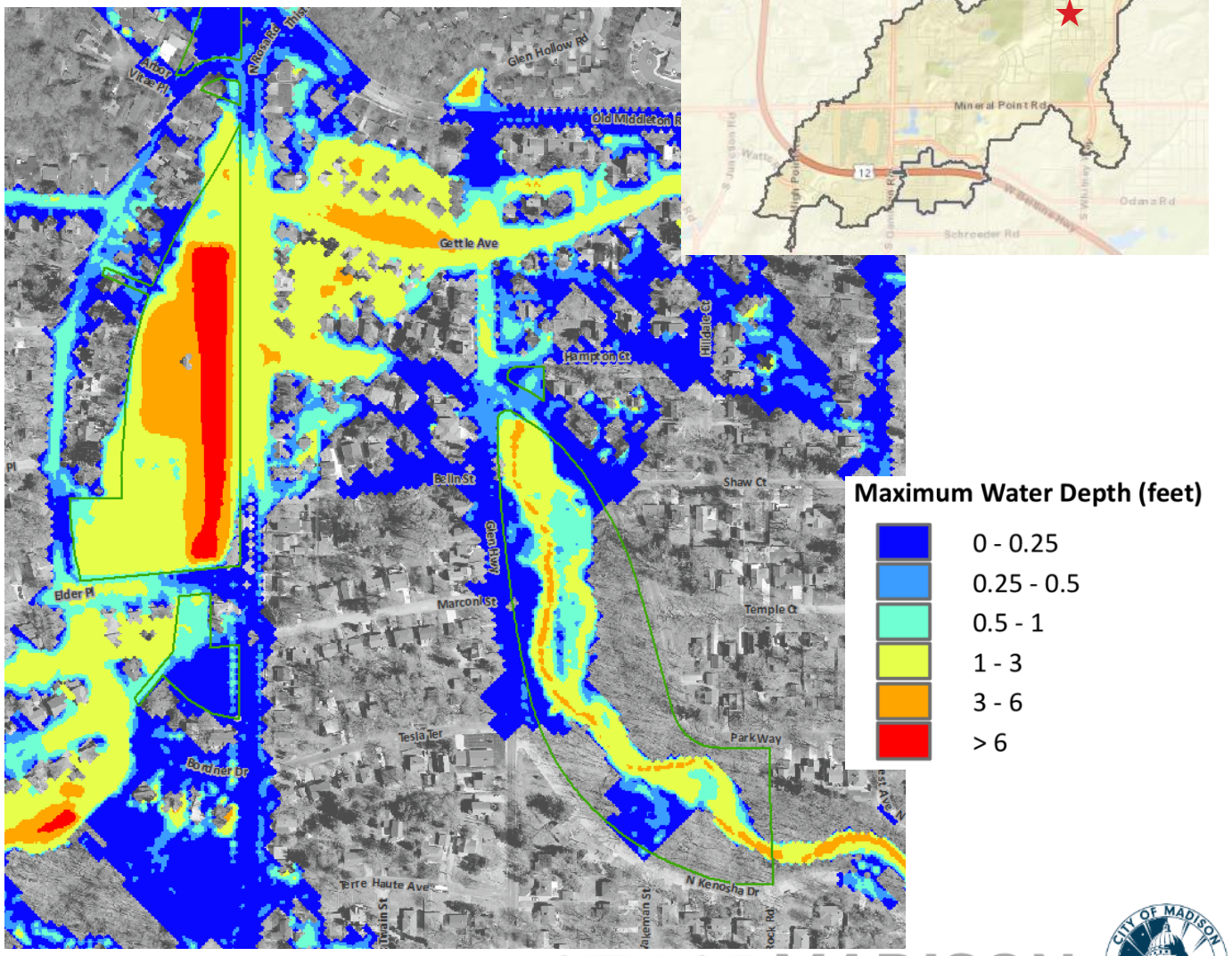
Glen Oak Hills Park Greenway

Flooding Issues

- Overflow down Glen Highway increases flooding at Gettle Avenue





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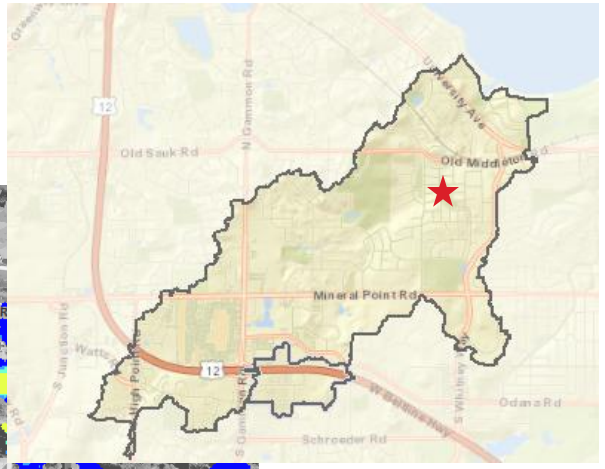
Glen Oak Hills Park Greenway

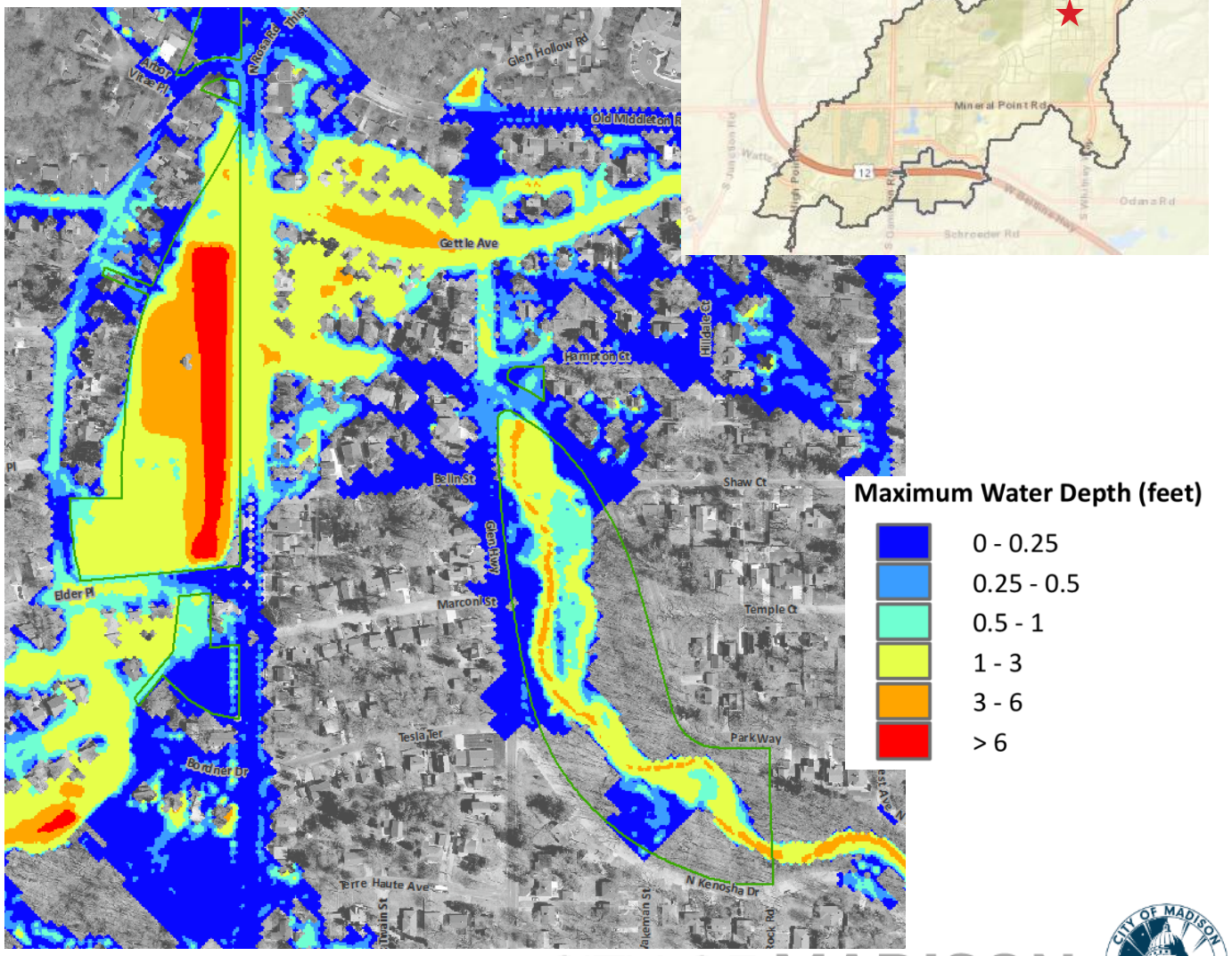
Flooding Issues

- Overflow down Glen Highway increases flooding at Gettle Avenue

Objective

- Eliminate / reduce structure flooding in the 1% Chance Event





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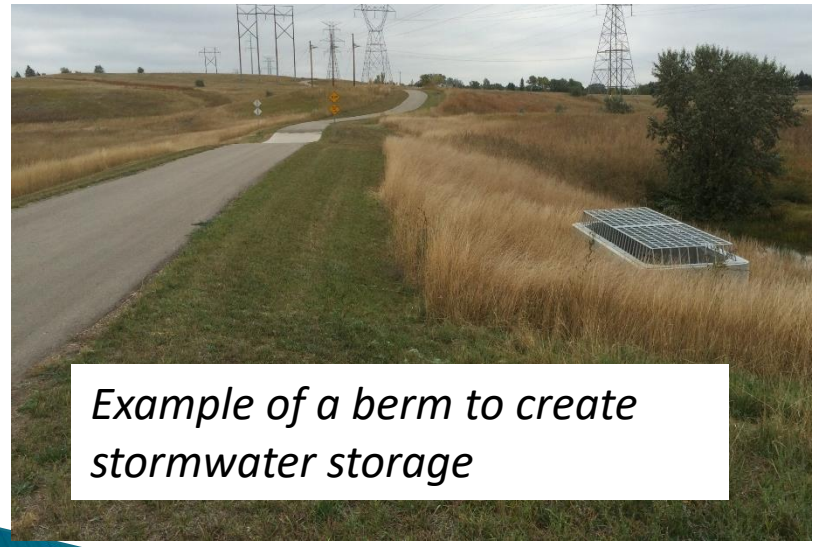
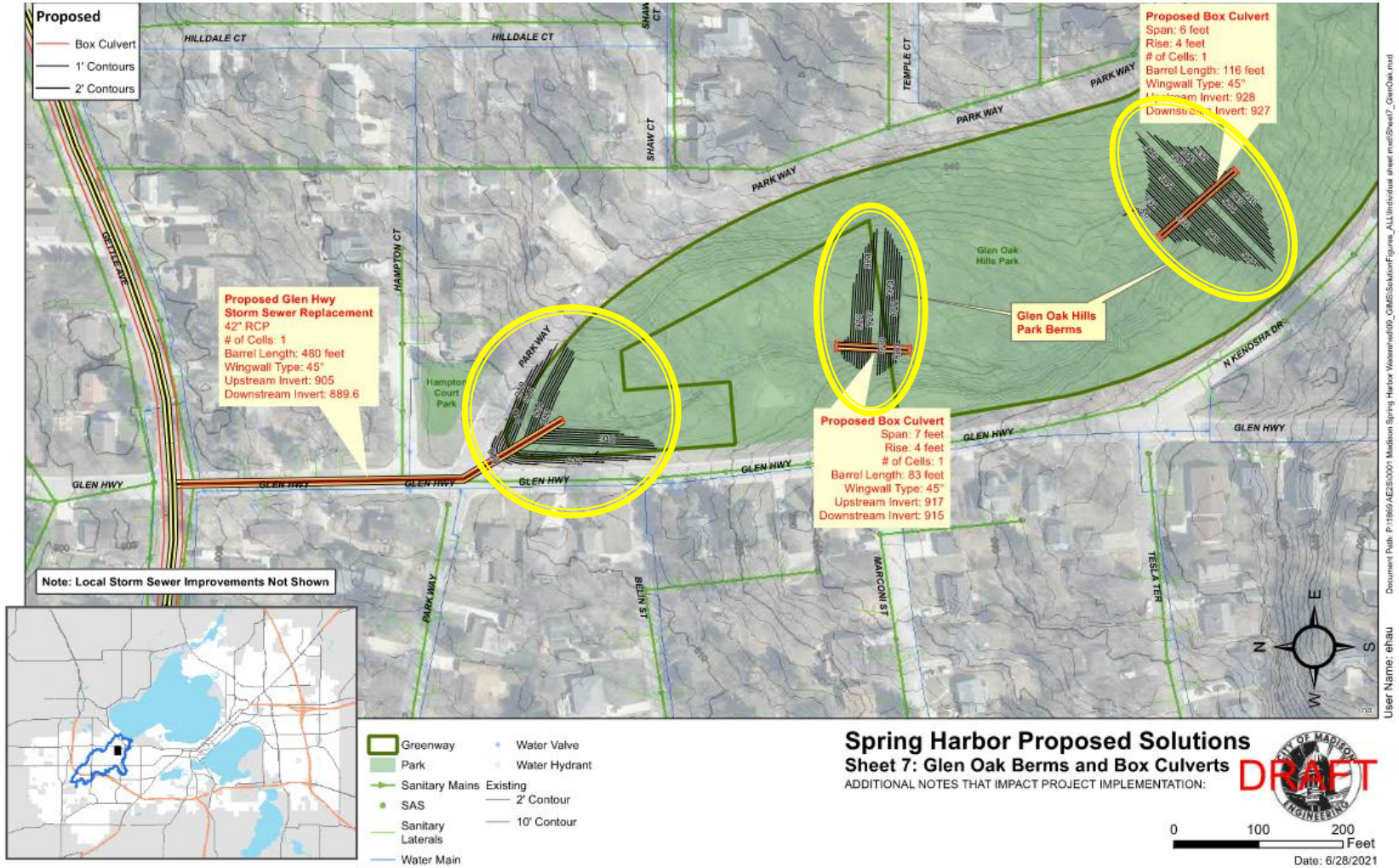
Glen Oak Hills Park Greenway

Proposed Improvements

- Three berms across the greenway to create additional storage



Example of a berm to create stormwater storage



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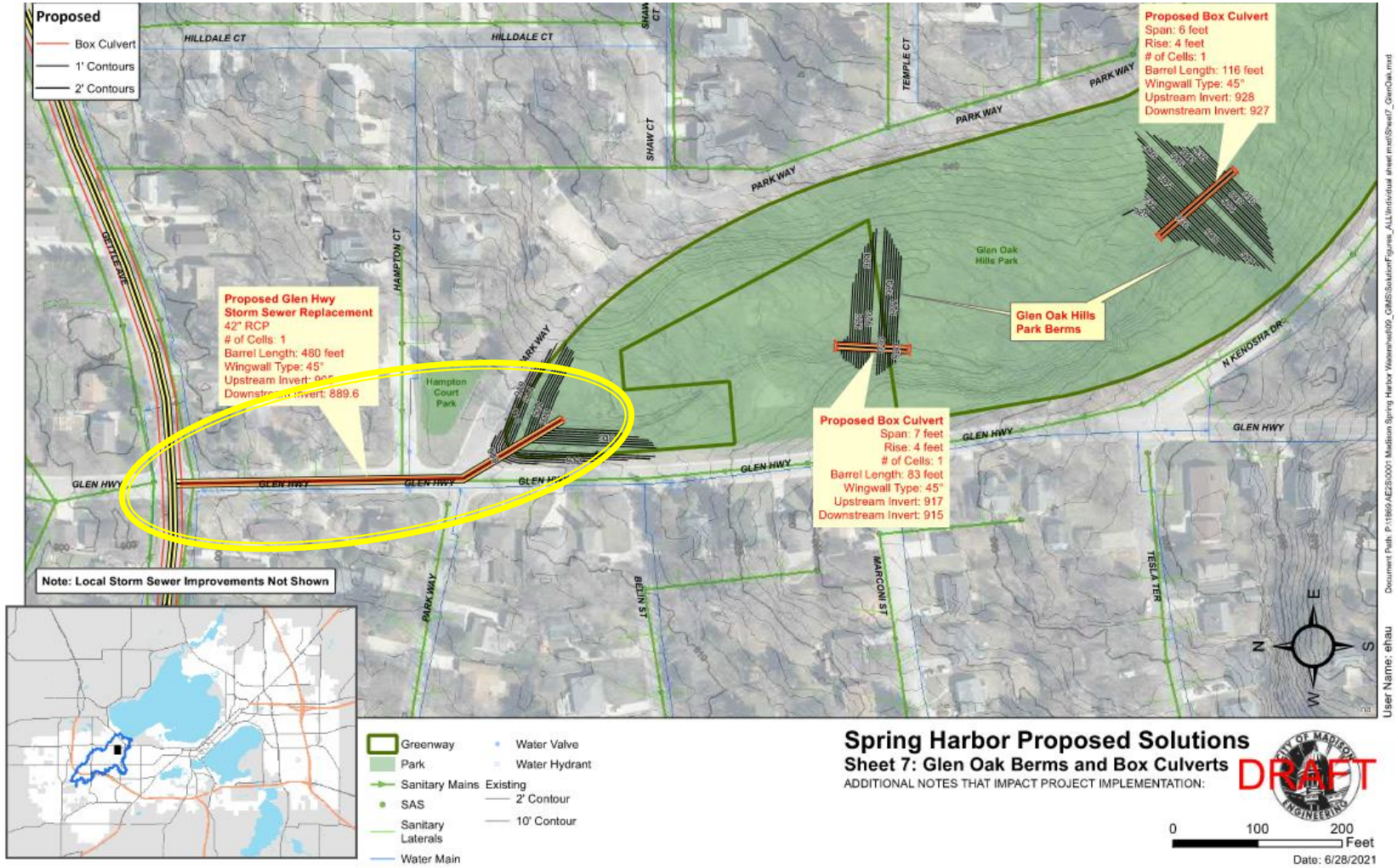
Glen Oak Hills Park Greenway

Proposed Improvements

- Three berms across the greenway to create additional storage
- Add an additional 42” storm sewer from the greenway to the box storm sewer on Gettle Avenue



CITY OF MADISON

Glen Oak Hills Park Greenway

Challenges / Alternatives Considered but Eliminated

- Excavation to create more storage
  - Existing oak trees
  - Existing Glen Oak Hills Park

Glen Oak Hills Park Greenway

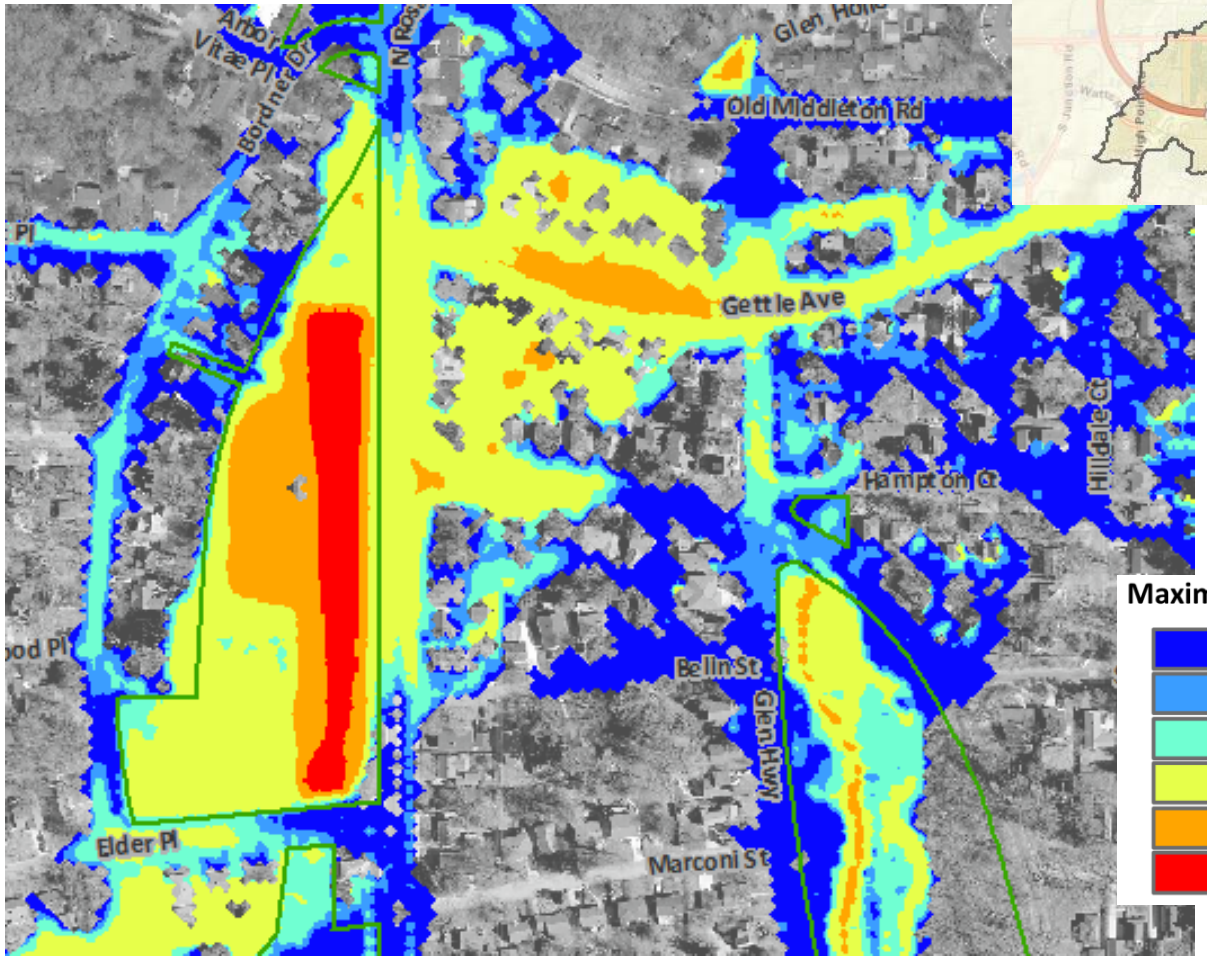
Challenges / Alternatives Considered but Eliminated

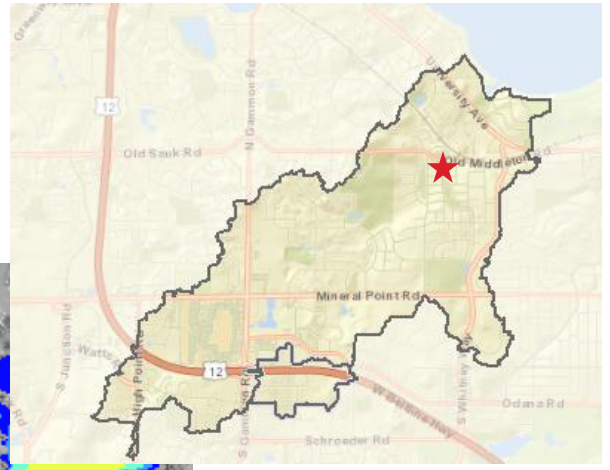
- Excavation
- Additional Outlet (beyond the planned 42” reinforced concrete pipe addition)
  - No additional benefit due to timing differences of the peak at Gettle Drive

Gettle Avenue Storm Sewer

Flooding Issues

- Multiple homes flooded along Gettle Avenue





CITY OF MADISON

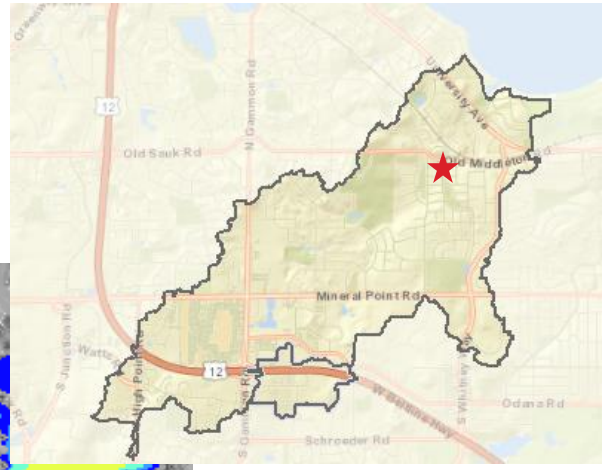
Gettle Avenue Storm Sewer

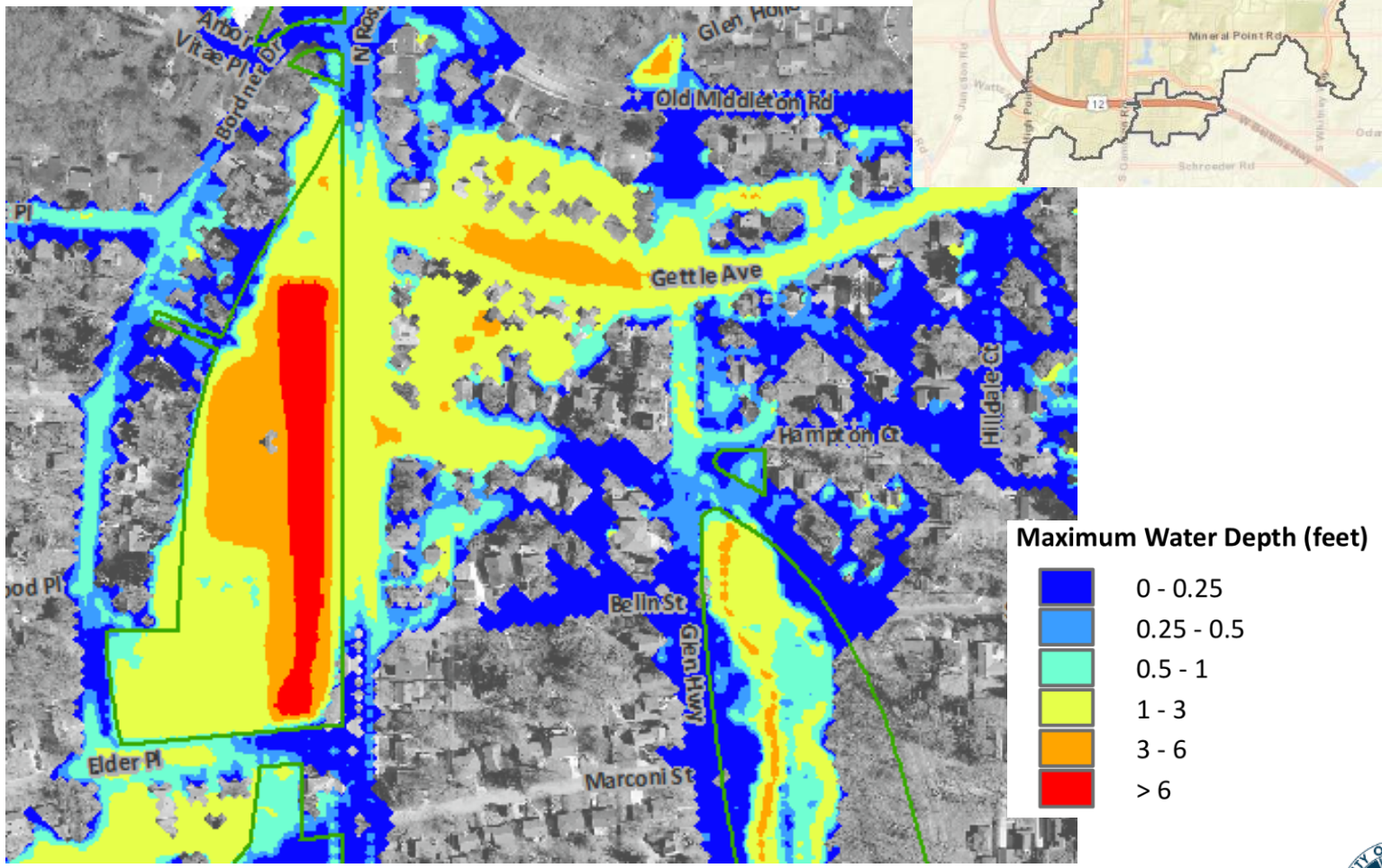
Flooding Issues

- Multiple homes flooded along Gettle Avenue

Objective

- Eliminate / reduce structure flooding in the 1% Chance Event



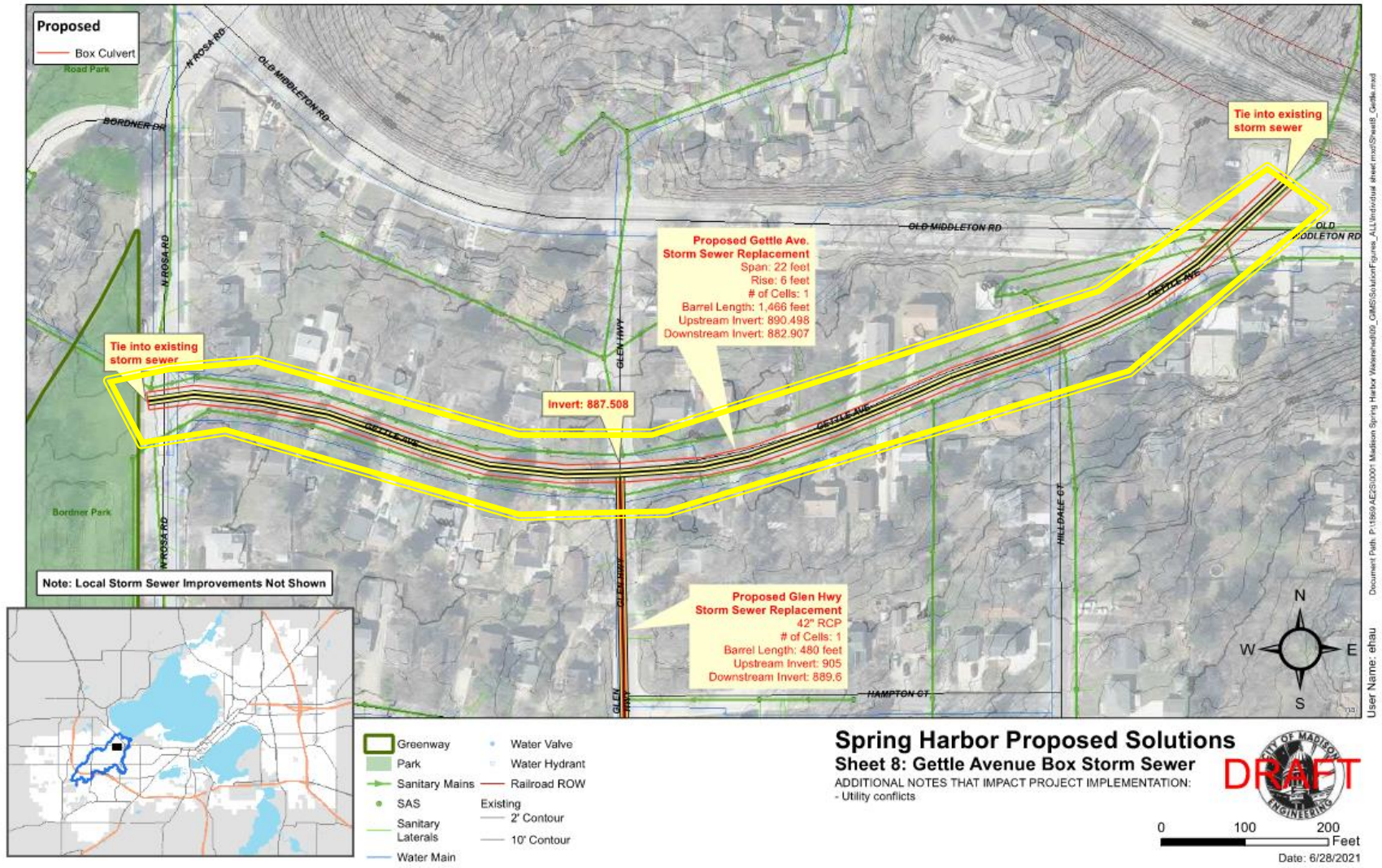


CITY OF MADISON

Gettle Avenue Storm Sewer

Proposed Improvements

- Increase the box storm sewer size to the equivalent of a 22’x6’ box storm sewer (currently varies from 14’x6’ to 17’x6’)

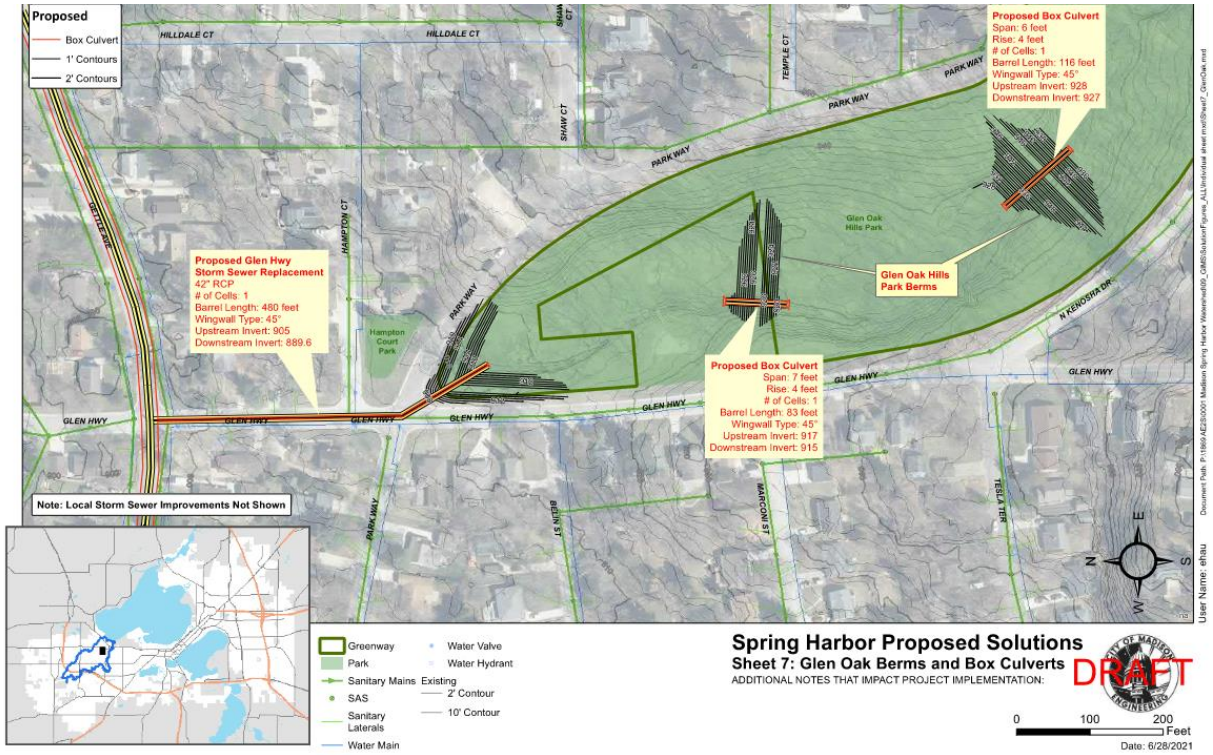


CITY OF MADISON

Gettle Avenue Storm Sewer

Challenges / Alternatives Considered but Eliminated

- Increased storage at Glen Oak Hills Park



CITY OF MADISON

Gettle Avenue Storm Sewer

Challenges / Alternatives Considered but Eliminated

- Increased storage at Glen Oak Hills Park
- Levee or flood wall around Bordner Park
  - Requires home buyout given the low elevation of surrounding homes

Example of a flood wall

Gettle Avenue Storm Sewer

Challenges / Alternatives Considered but Eliminated

- Increased storage at Glen Oak Hills Park
- Levee or flood wall around Bordner Park
- Expand storage area in Bordner Park
  - Requires an area double the existing area (home buyouts)

Gettle Avenue Storm Sewer

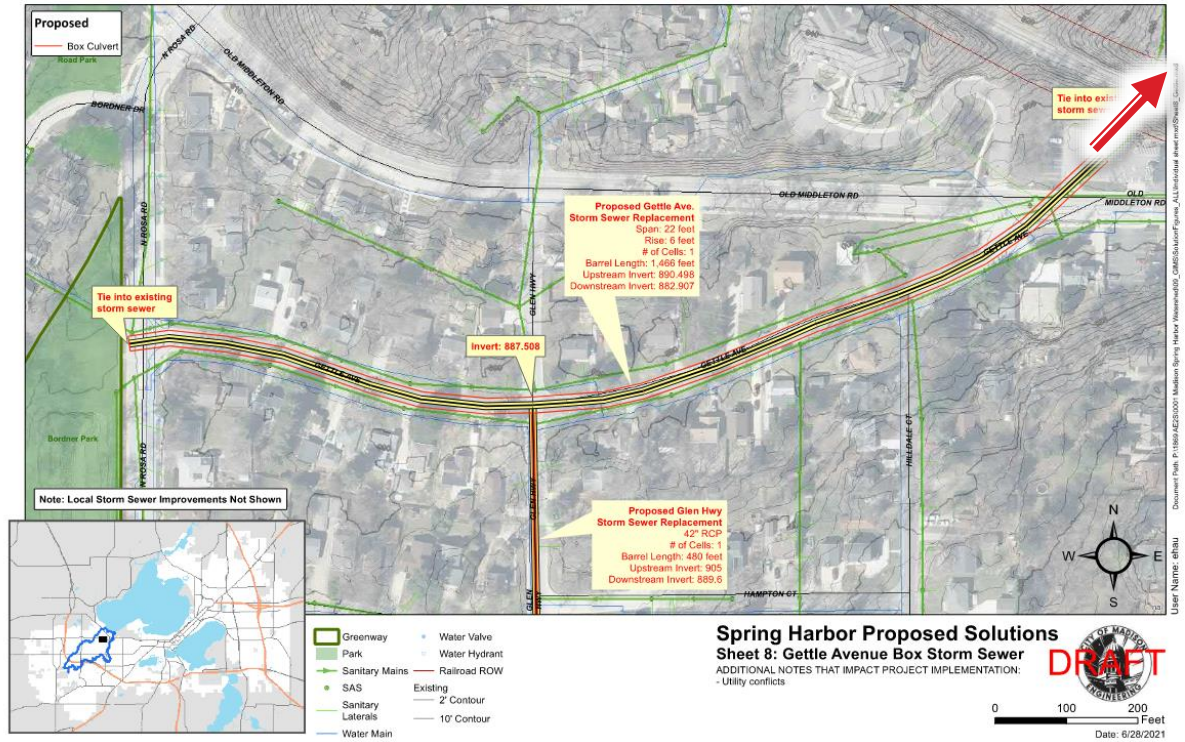
Challenges / Alternatives Considered but Eliminated

- Increased storage at Glen Oak Hills Park
- Levee or flood wall around Bordner Park
- Expand storage area in Bordner Park
- Excavate/lift station
  - Requires a depth about 20 feet below the existing box storm sewer

Gettle Avenue Storm Sewer

Challenges / Alternatives Considered but Eliminated

- Increased storage at Glen Oak Hills Park
- Levee or flood wall around Bordner Park
- Expand storage area in Bordner Park
- Excavate/lift station
- Expand stormsewer from railroad to Spring Harbor
  - Lack of additional benefit

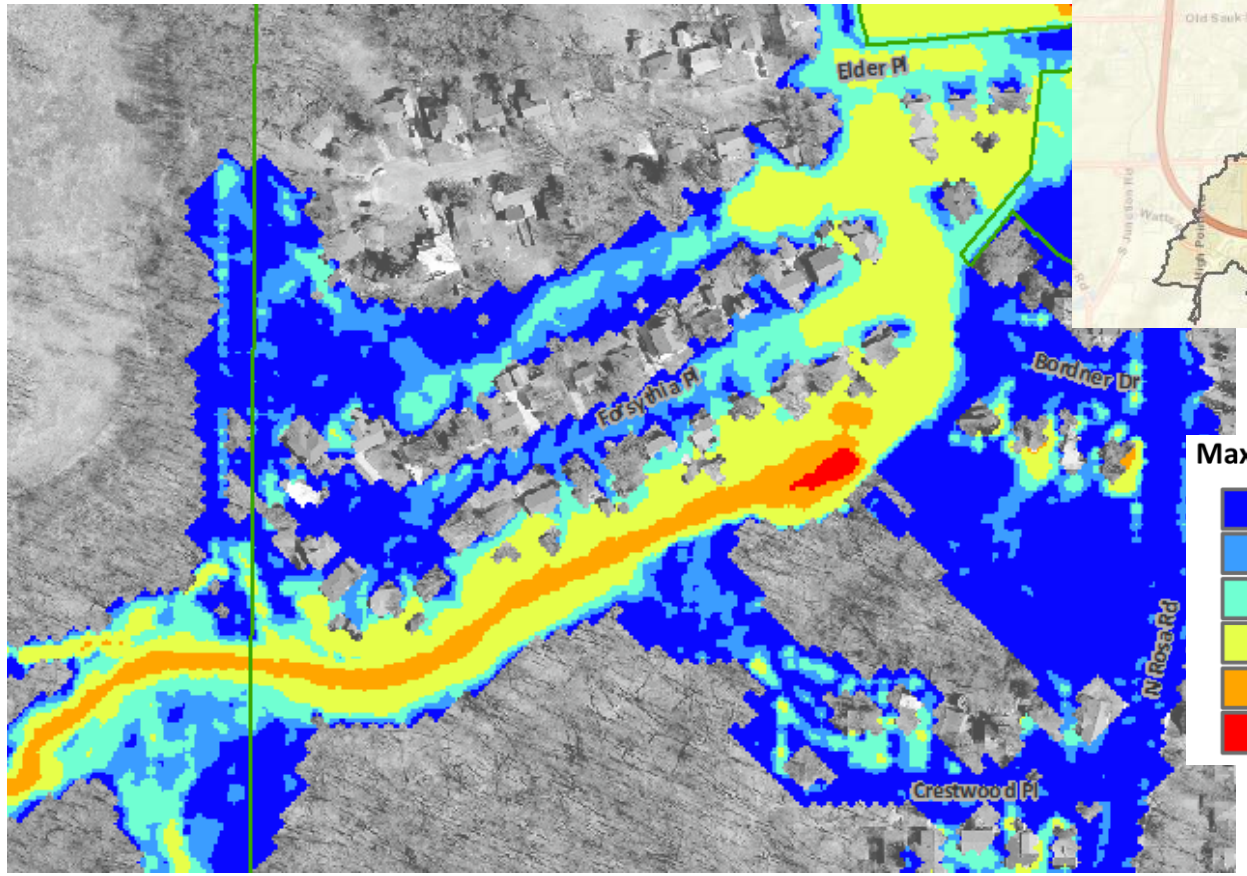


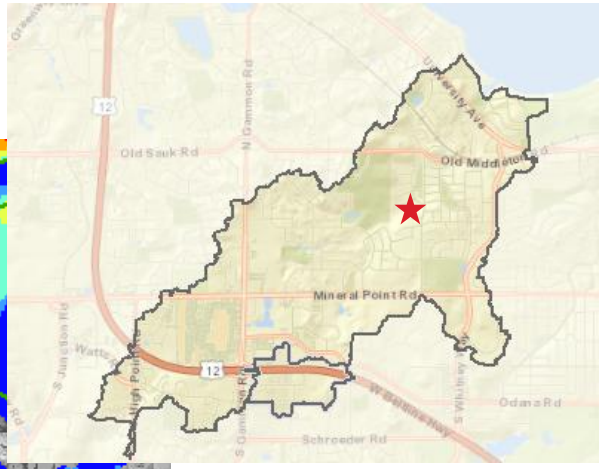
CITY OF MADISON

Owen Park North South Channel and Floodwall

Flooding Issues

- Owen Park north-south channel overtops and flows toward houses
- Owen Park concrete channel overtops and discharges through lots/ houses





Maximum Water Depth (feet)

- 0 - 0.25
- 0.25 - 0.5
- 0.5 - 1
- 1 - 3
- 3 - 6
- > 6

CITY OF MADISON

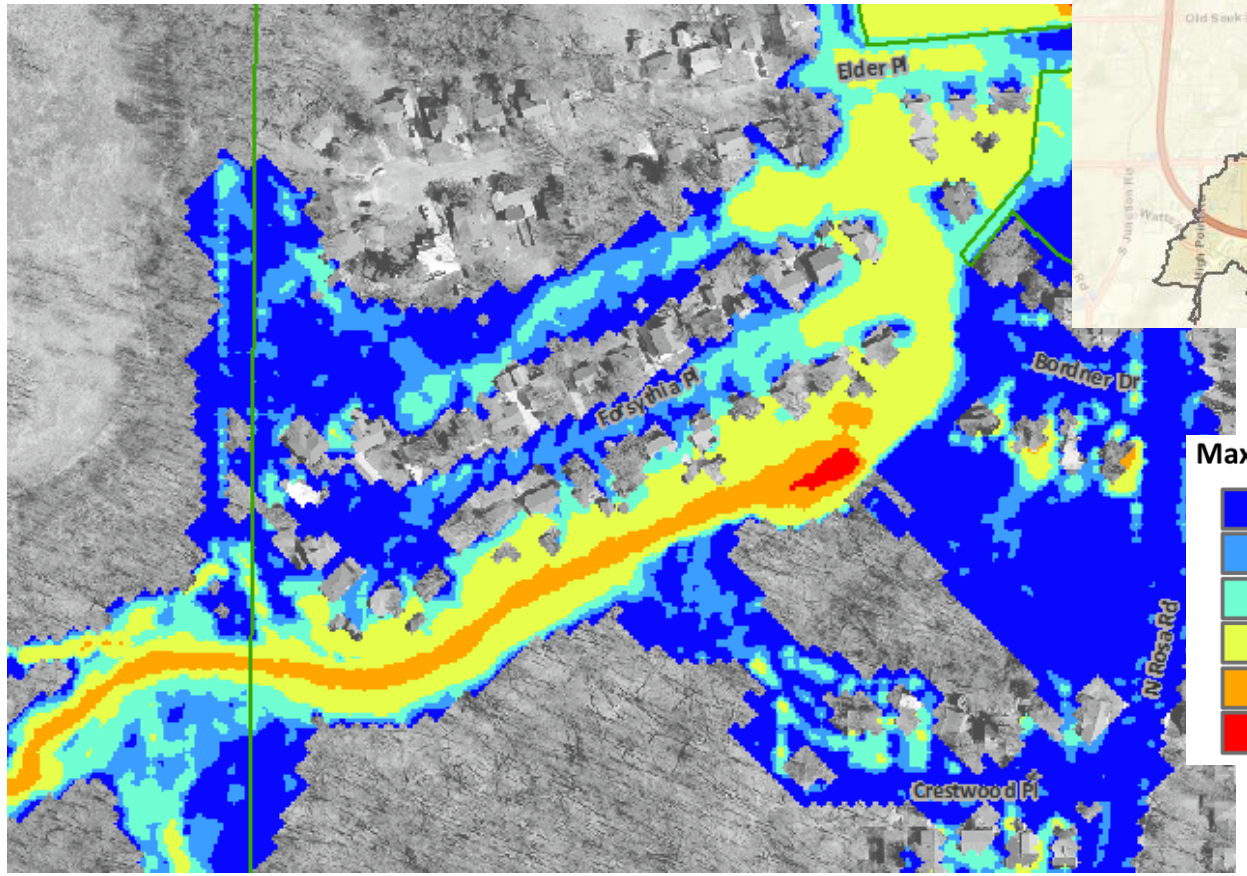
Owen Park North South Channel and Floodwall

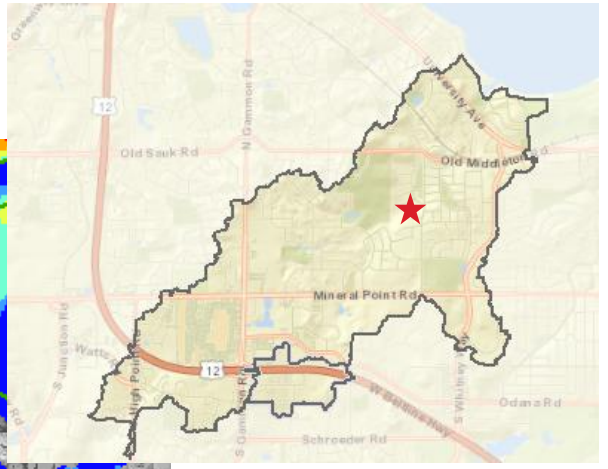
Flooding Issues

- Owen Park north-south channel overtops and flows toward houses
- Owen Park concrete channel overtops and discharges through lots/ houses

Objective

- Eliminate structure flooding in the 1% chance event





Maximum Water Depth (feet)

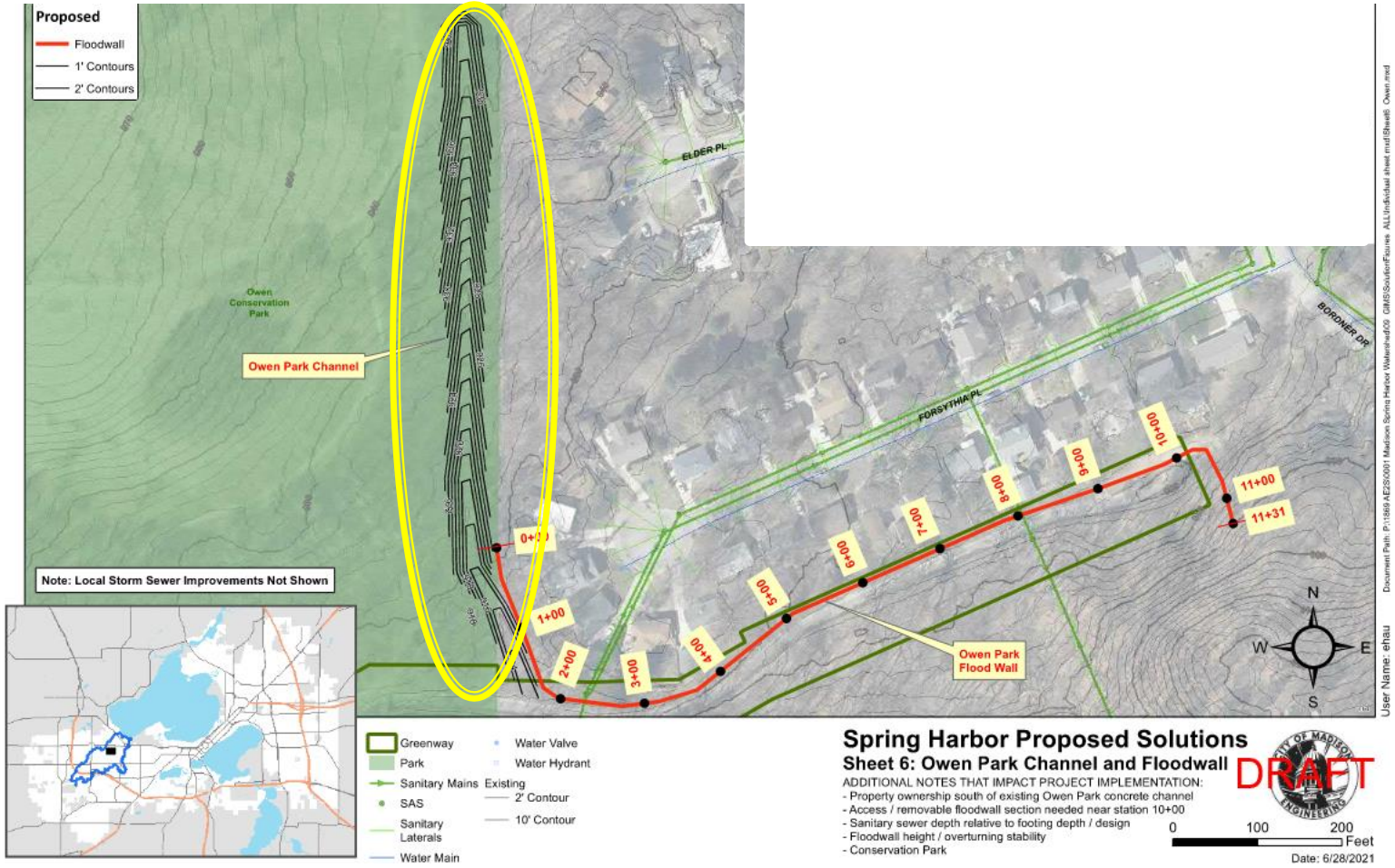
- 0 - 0.25
- 0.25 - 0.5
- 0.5 - 1
- 1 - 3
- 3 - 6
- > 6

CITY OF MADISON

Owen Park Channel and Floodwall

Proposed Improvements

- North-South Channel
  - ~5’ deep trapezoidal channel

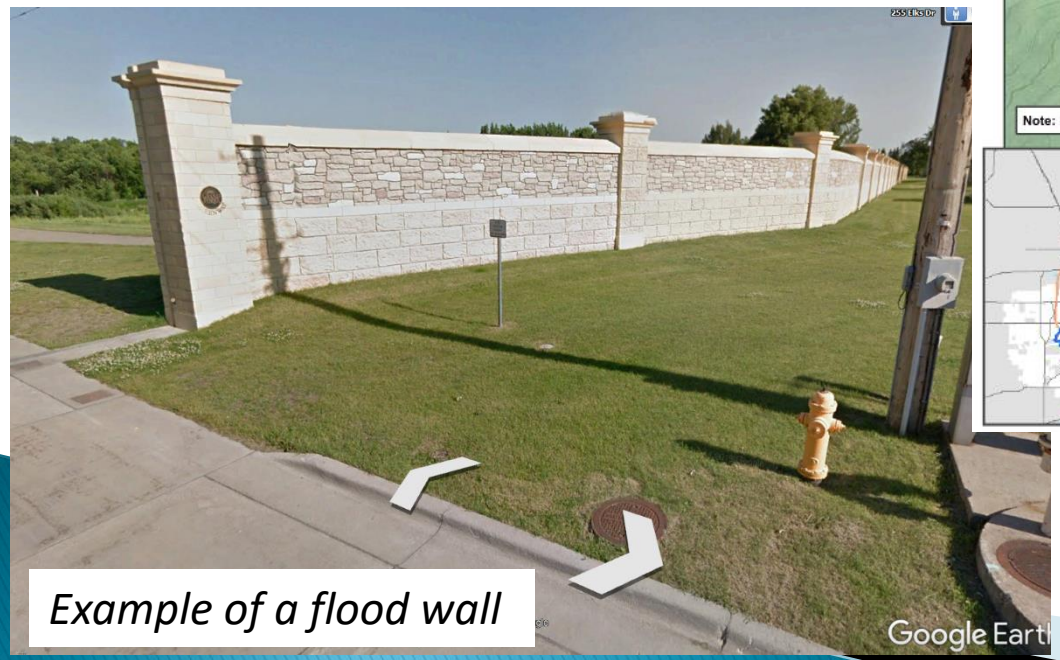


CITY OF MADISON

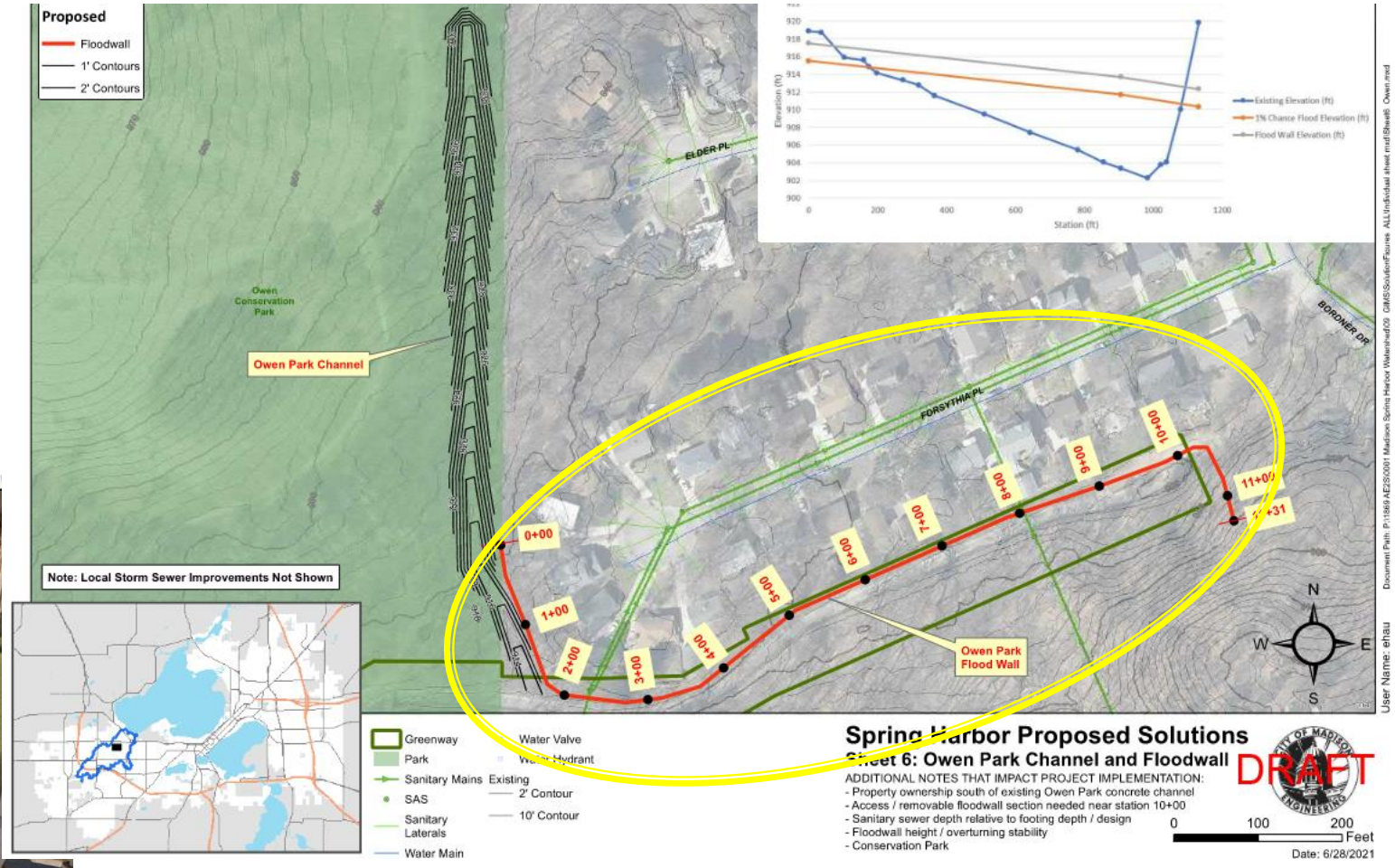
Owen Park Channel and Floodwall

Proposed Improvements

- North-South Channel
  - ~5’ deep trapezoidal channel
- Flood Wall
  - Up to 11’ tall and located along north side of existing concrete channel



Example of a flood wall



CITY OF MADISON

Owen Park Channel and Floodwall

Challenges / Alternatives Considered but Eliminated

- Increased box culvert capacity south of Bordner Park
  - Lack of benefit

Owen Park Channel and Floodwall

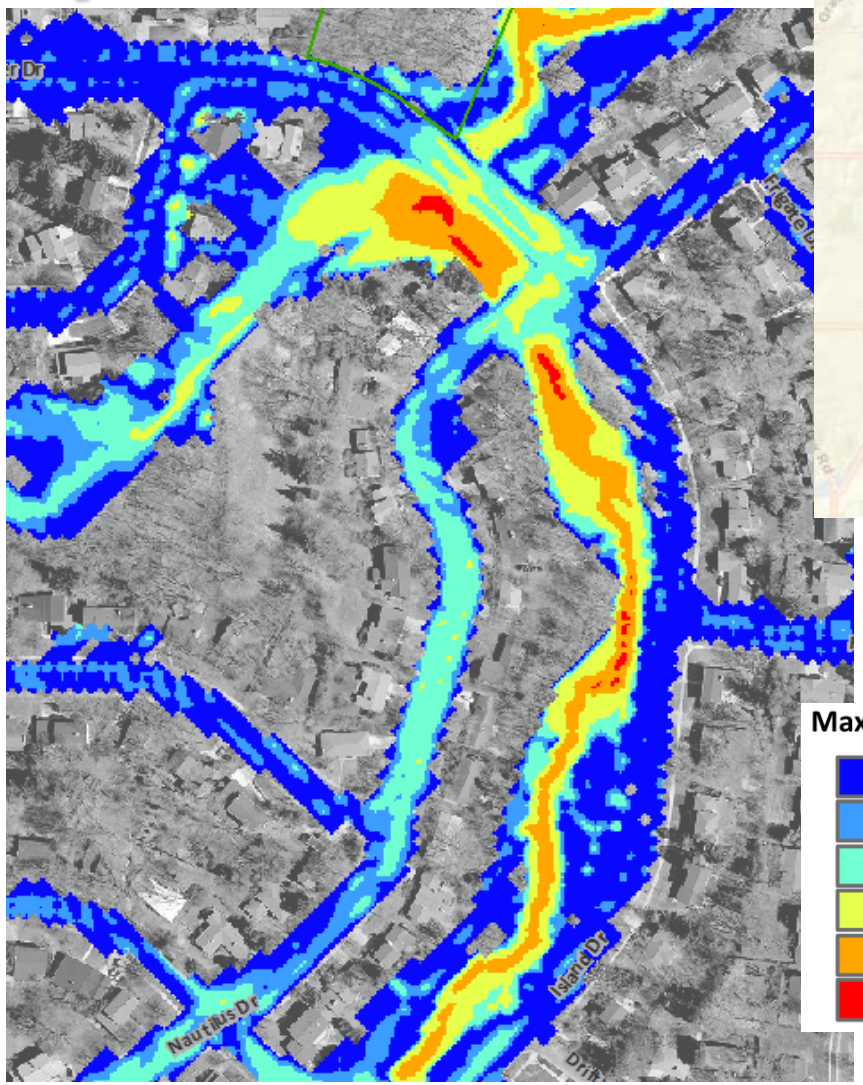
Challenges / Alternatives Considered but Eliminated

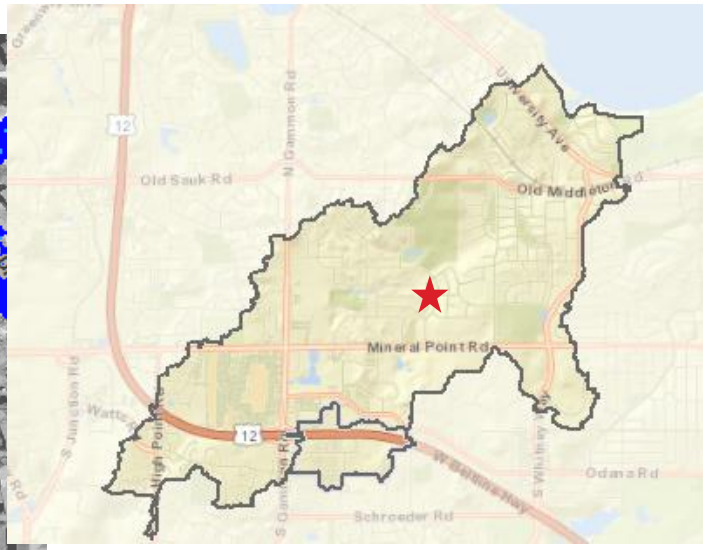
- Increased box culvert capacity south of Bordner Park
  - Lack of benefit
- Increase channel capacity-depth/width in greenway
  - Impacts to forested areas
  - Recent investment in concrete channel
  - Utility conflicts

Masthead Greenway Ponds

Flooding Issues

- Road overtopping
- Home flooding
- Downstream flow increases





Maximum Water Depth (feet)

- 0 - 0.25
- 0.25 - 0.5
- 0.5 - 1
- 1 - 3
- 3 - 6
- > 6

CITY OF MADISON

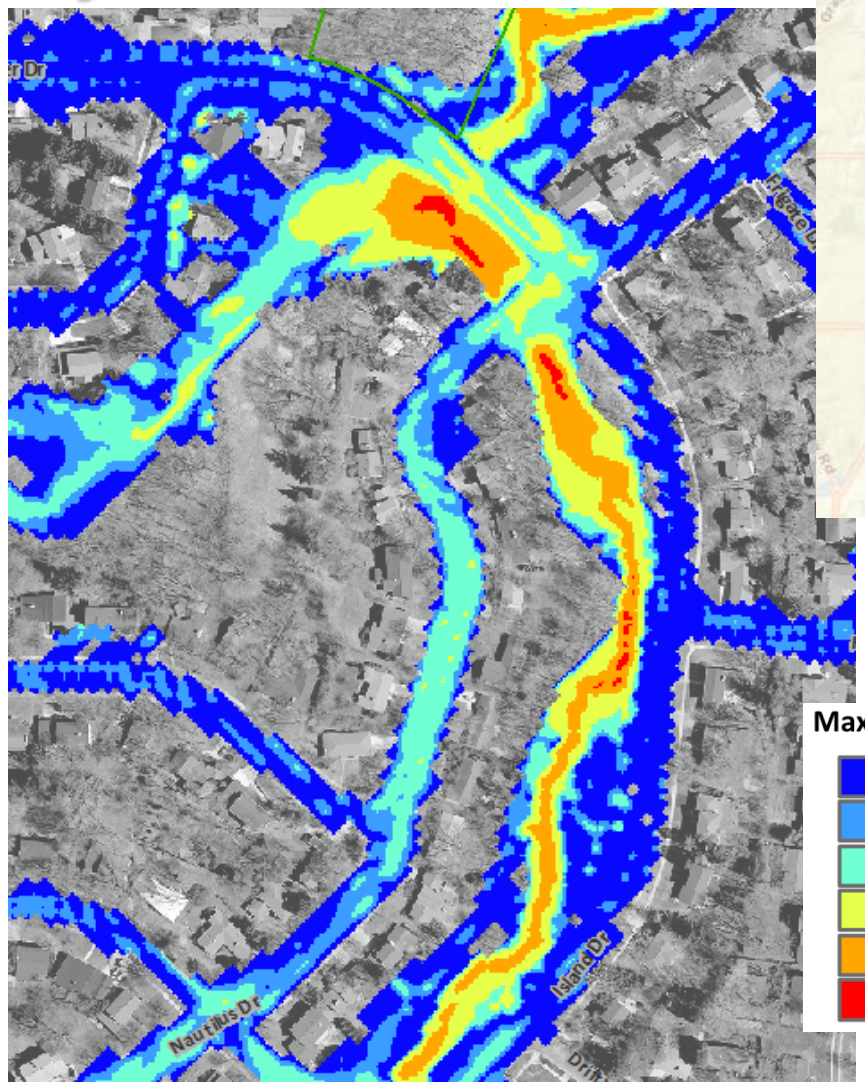
Masthead Greenway Ponds

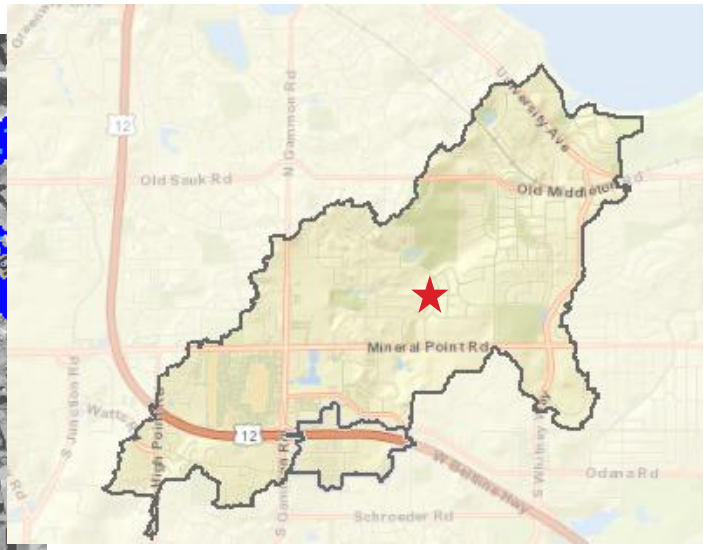
Flooding Issues

- Road overtopping
- Home flooding
- Downstream flow increases

Objective

- Eliminate roadway overtopping
- Avoid structure flooding in the 1% chance event





Maximum Water Depth (feet)

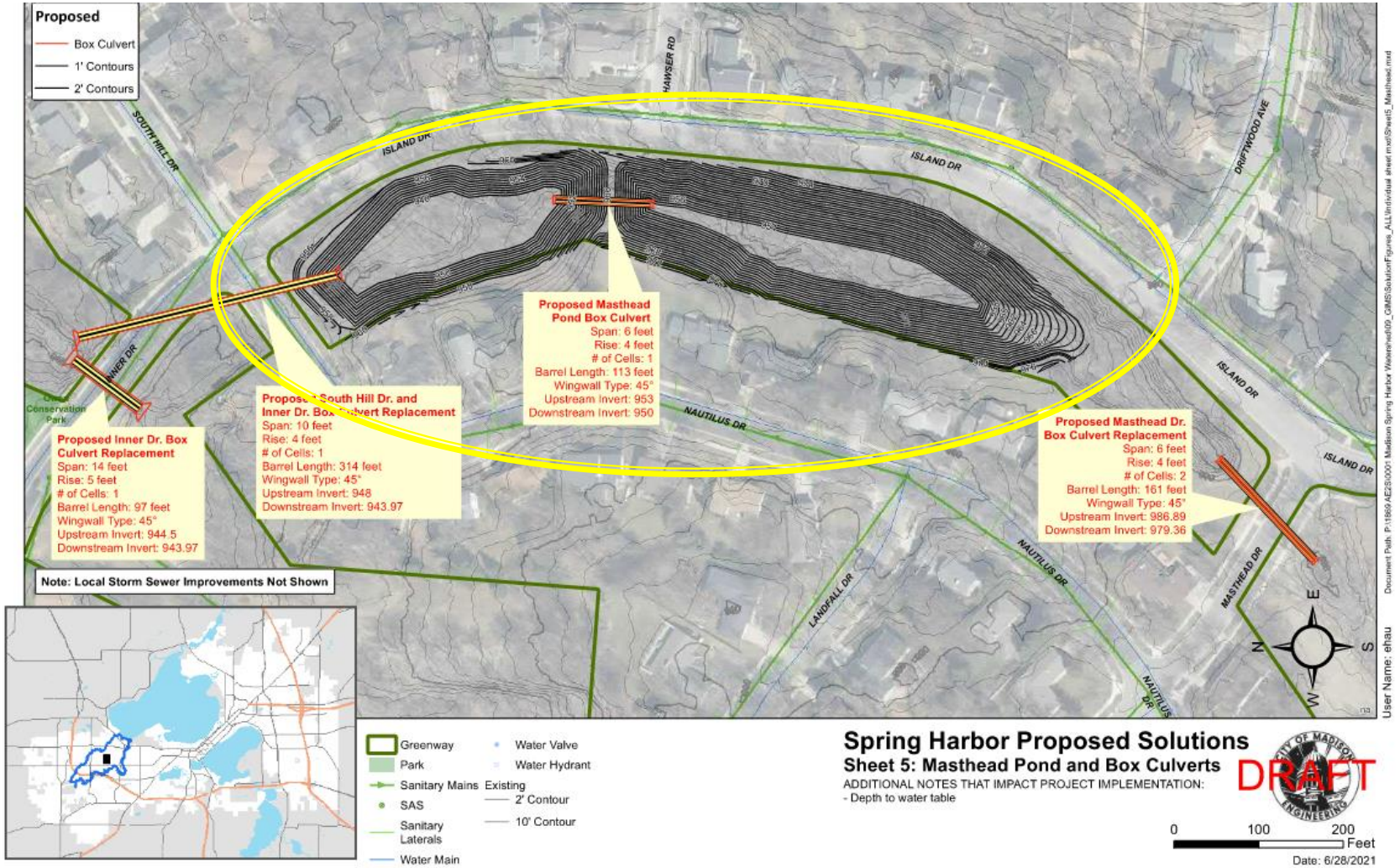
- 0 - 0.25
- 0.25 - 0.5
- 0.5 - 1
- 1 - 3
- 3 - 6
- > 6

CITY OF MADISON

Masthead Greenway Ponds

Proposed Improvements

- Two Regional Detention facilities from Masthead to Nautilus (northern pond depth ~ 10’ and southern pond depth ~ 13’)

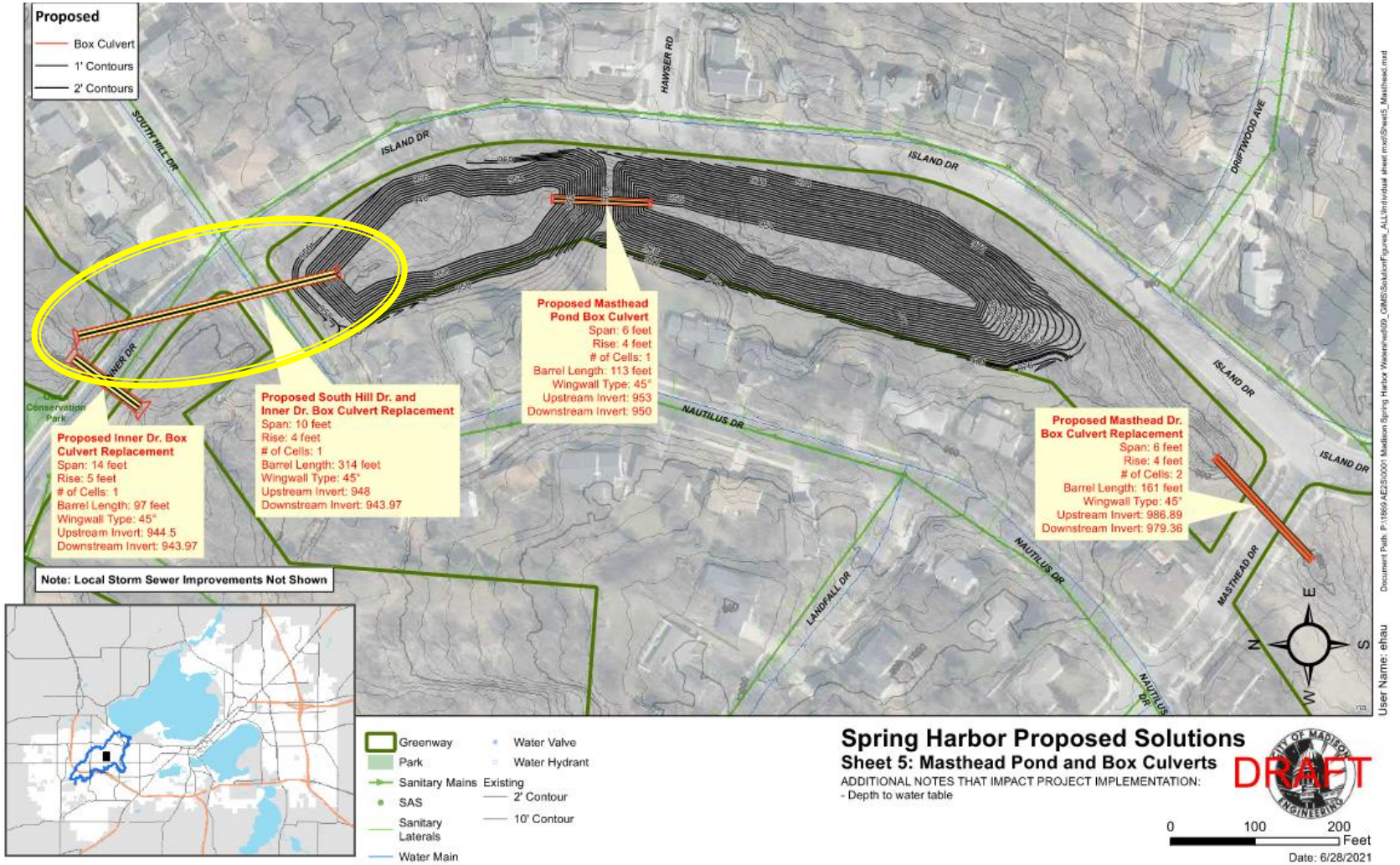


CITY OF MADISON

Masthead Greenway Ponds

Proposed Improvements

- Two Regional Detention facilities from Masthead to Nautilus (northern pond depth ~ 10’ and southern pond depth ~ 13’)
- Box Storm Sewer From Masthead-Nautilus Greenway



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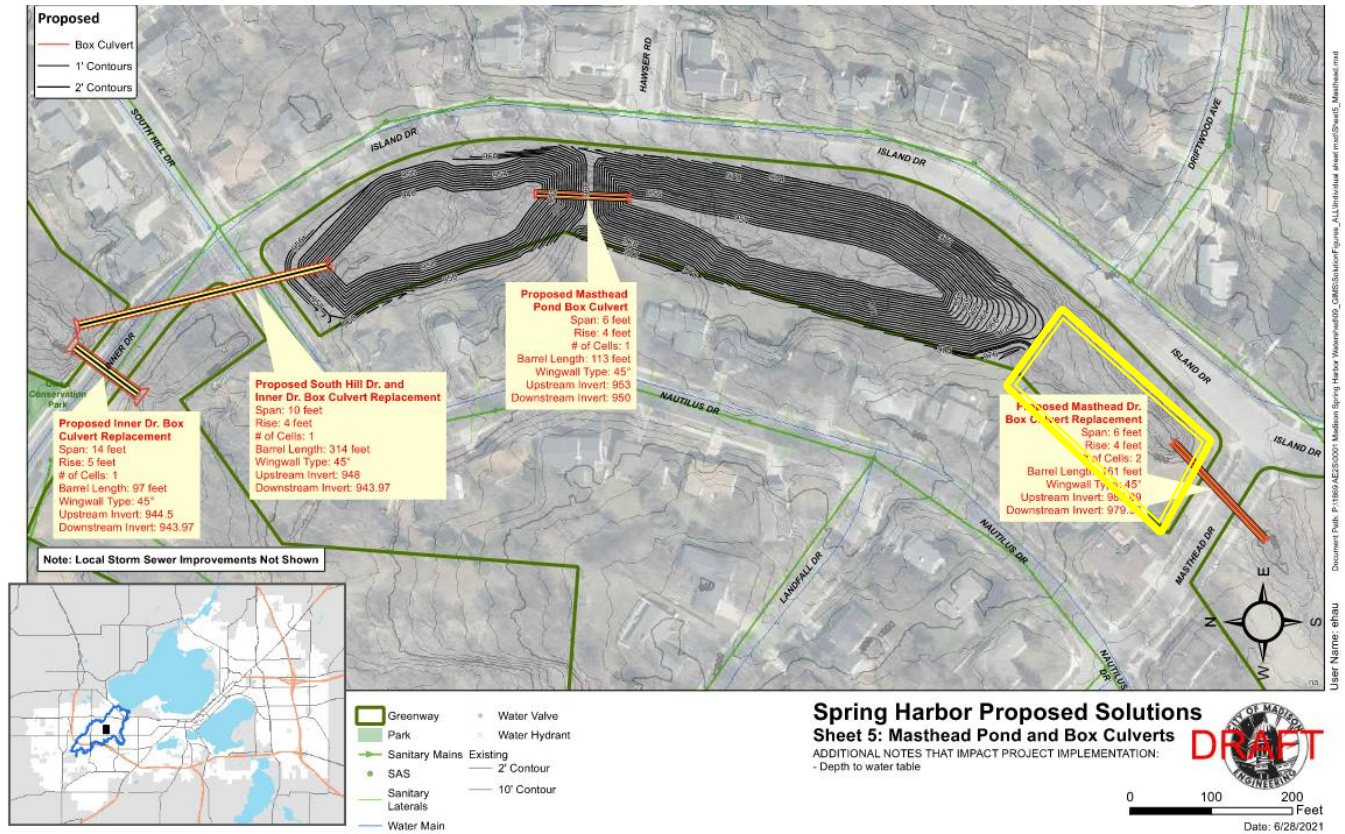
Masthead Greenway Ponds

Challenges / Alternatives Considered but Eliminated

- Adding a third basin
  - Narrow corridor and steep grades



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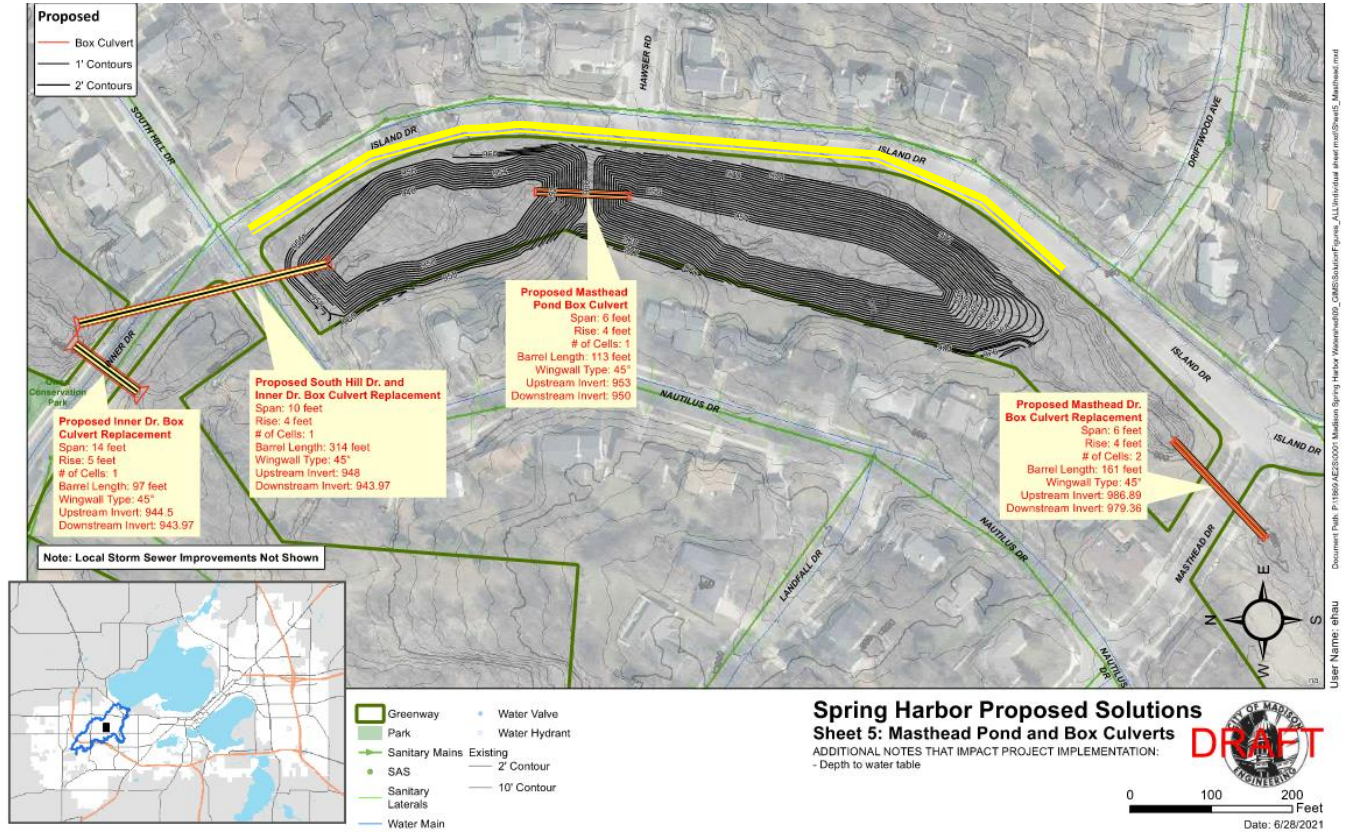
Masthead Greenway Ponds

Challenges / Alternatives Considered but Eliminated

- Adding a third basin
- Reduce width of Island Drive
  - Substantial road reconstruction

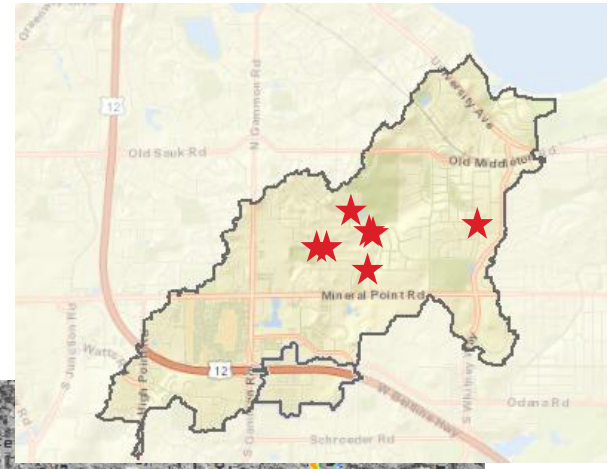


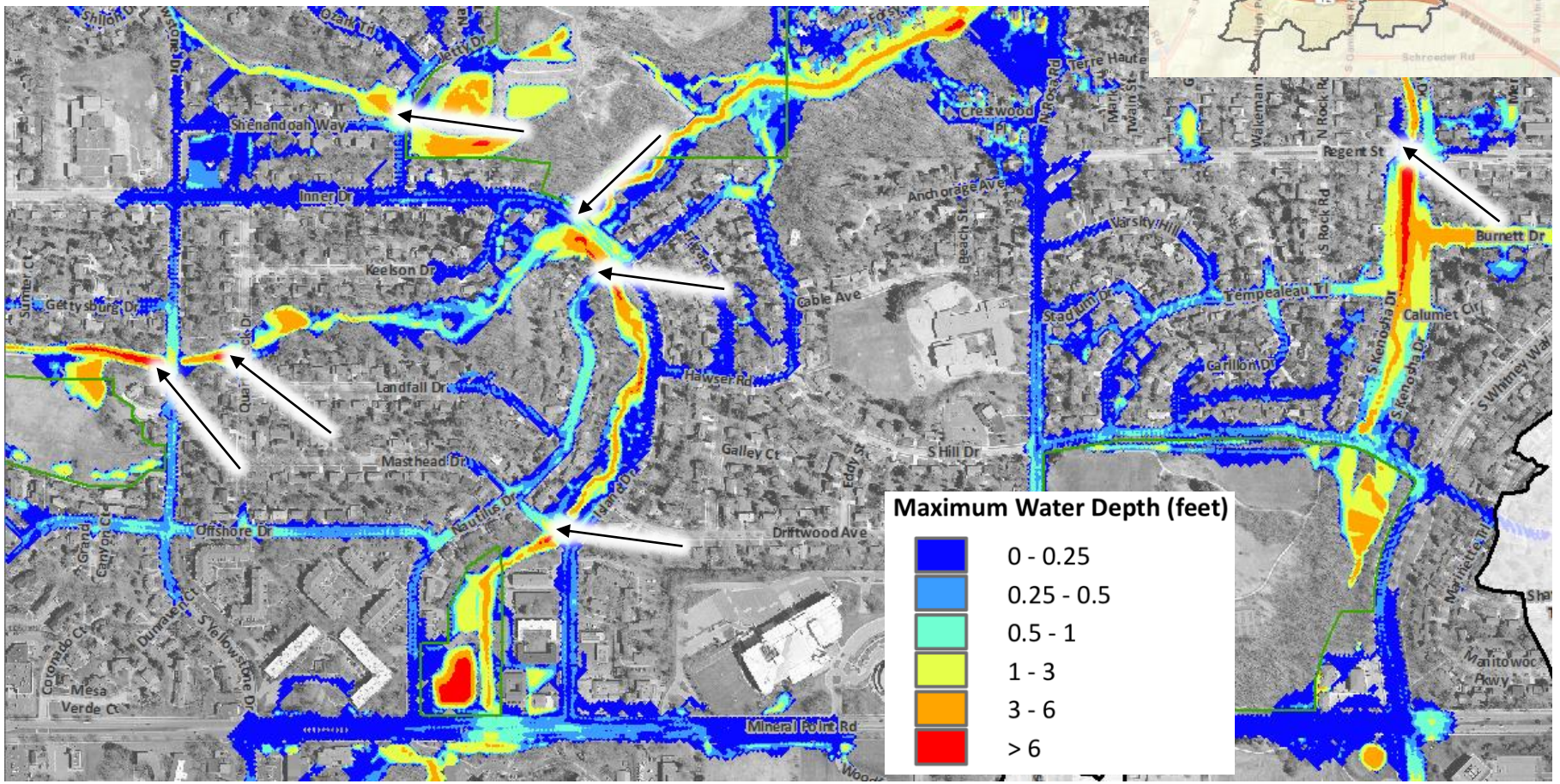
CITY OF MADISON

Greenway Crossings

Flooding Issues

- Road overtopping





CITY OF MADISON

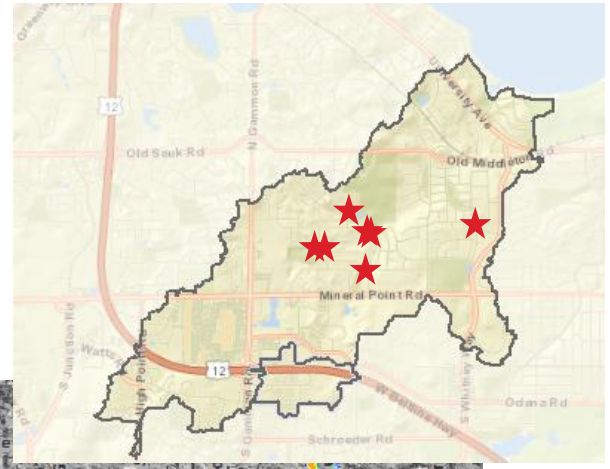
Greenway Crossings

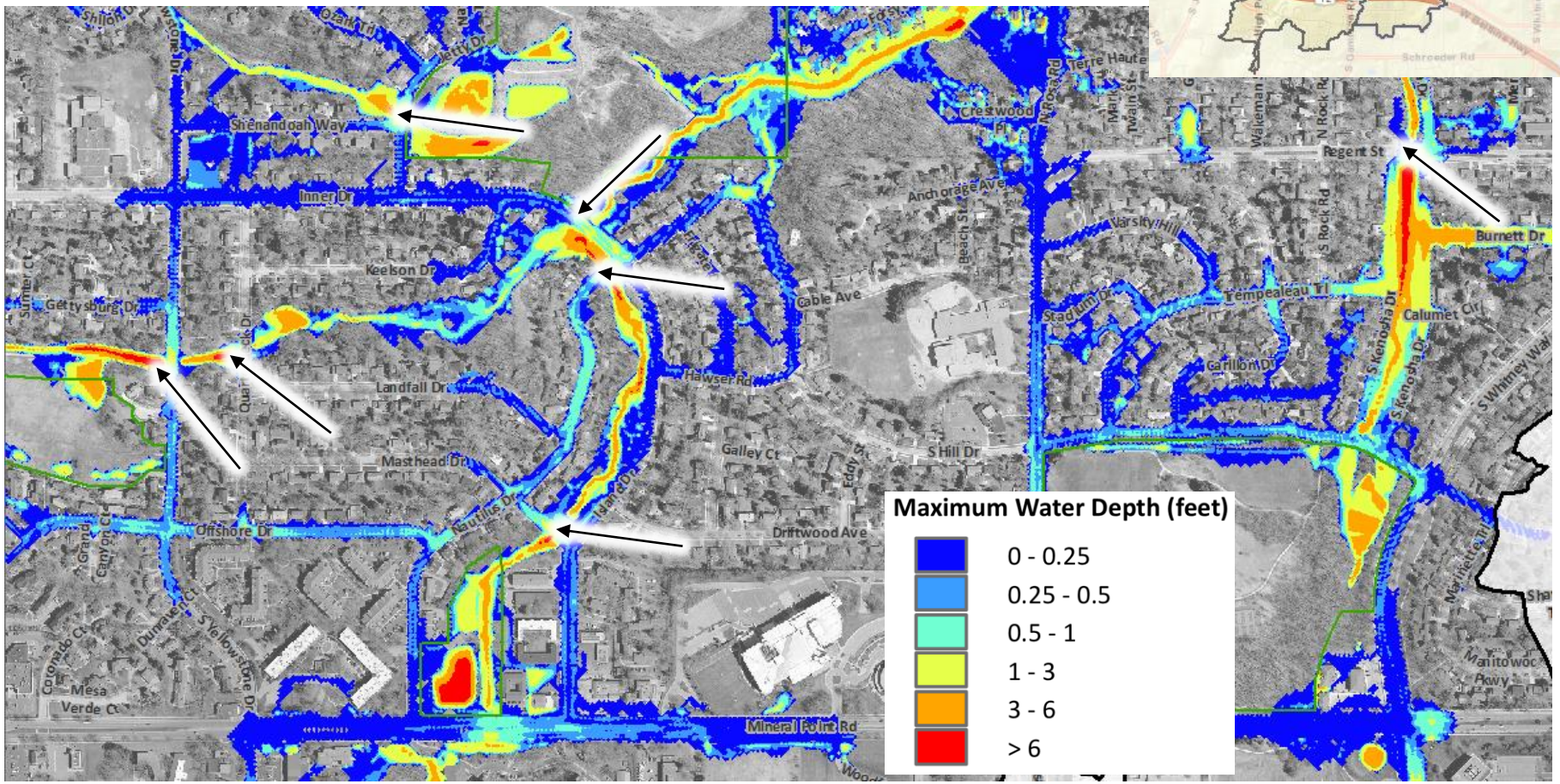
Flooding Issues

- Road overtopping

Objective

- Eliminate roadway overtopping in 1% Chance Event





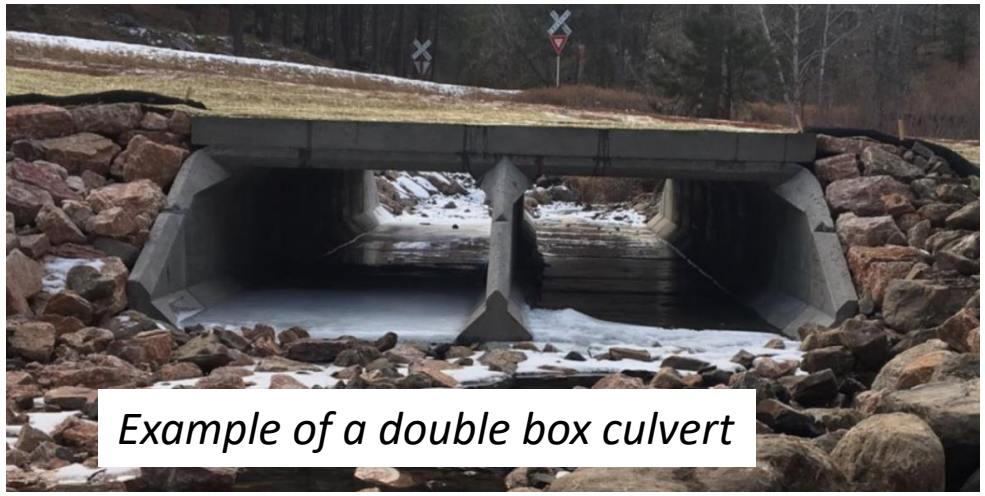
CITY OF MADISON

Greenway Crossings

Proposed Improvements

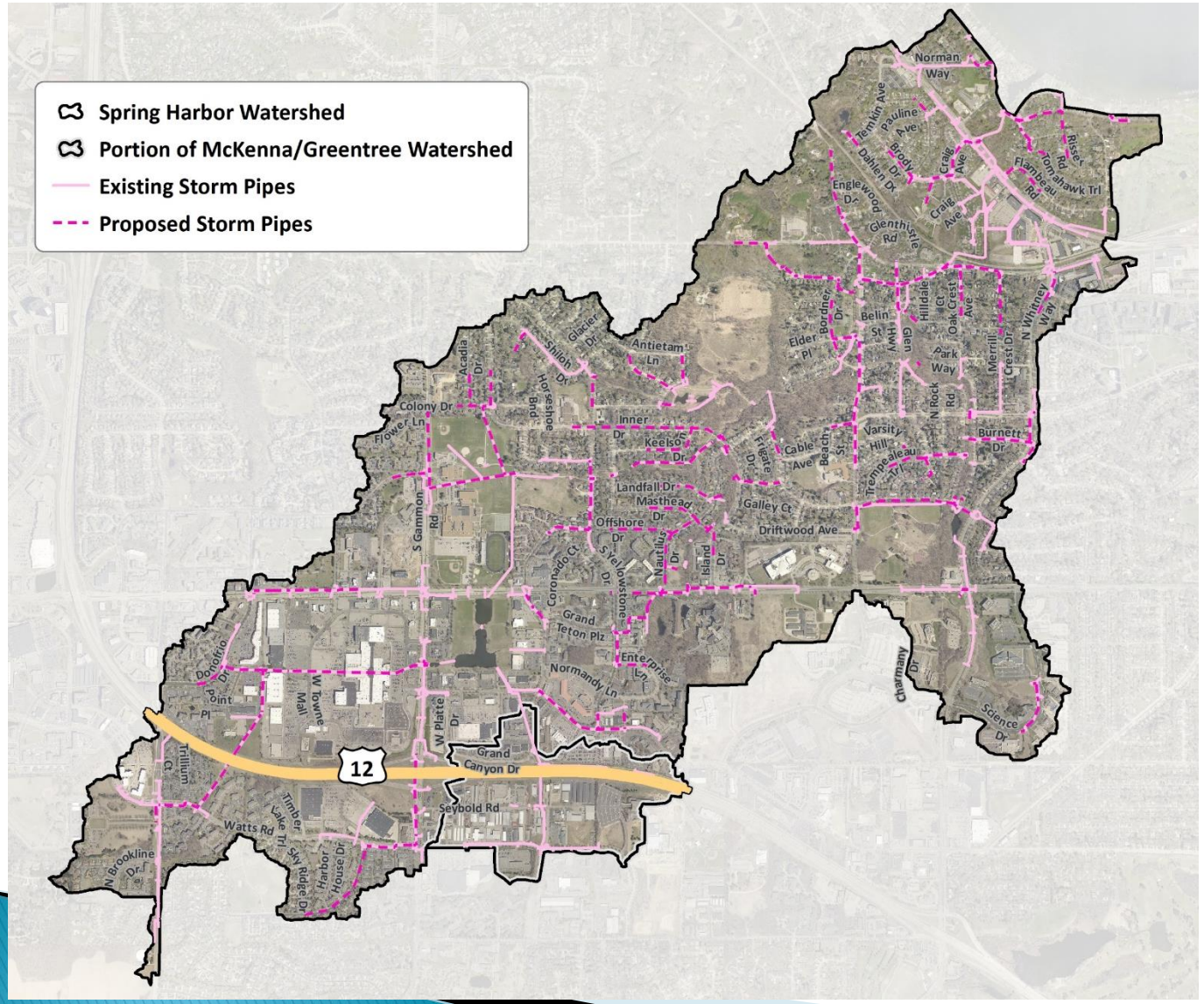
- Yellowstone-8’x4’ Box Culvert
- Quarterdeck Drive-12’x5’ Box Culvert
- Inner Drive-14’x5’ Box Culvert
- Nautilus Drive-10’x4’ Box Culvert
- Regent Street-6’x5’ Double Box Culvert
- Masthead Drive-6’x4’ Double Box Culvert
- Jetty Drive-4’x4’ Box Culvert

Example of a single box culvert



Example of a double box culvert

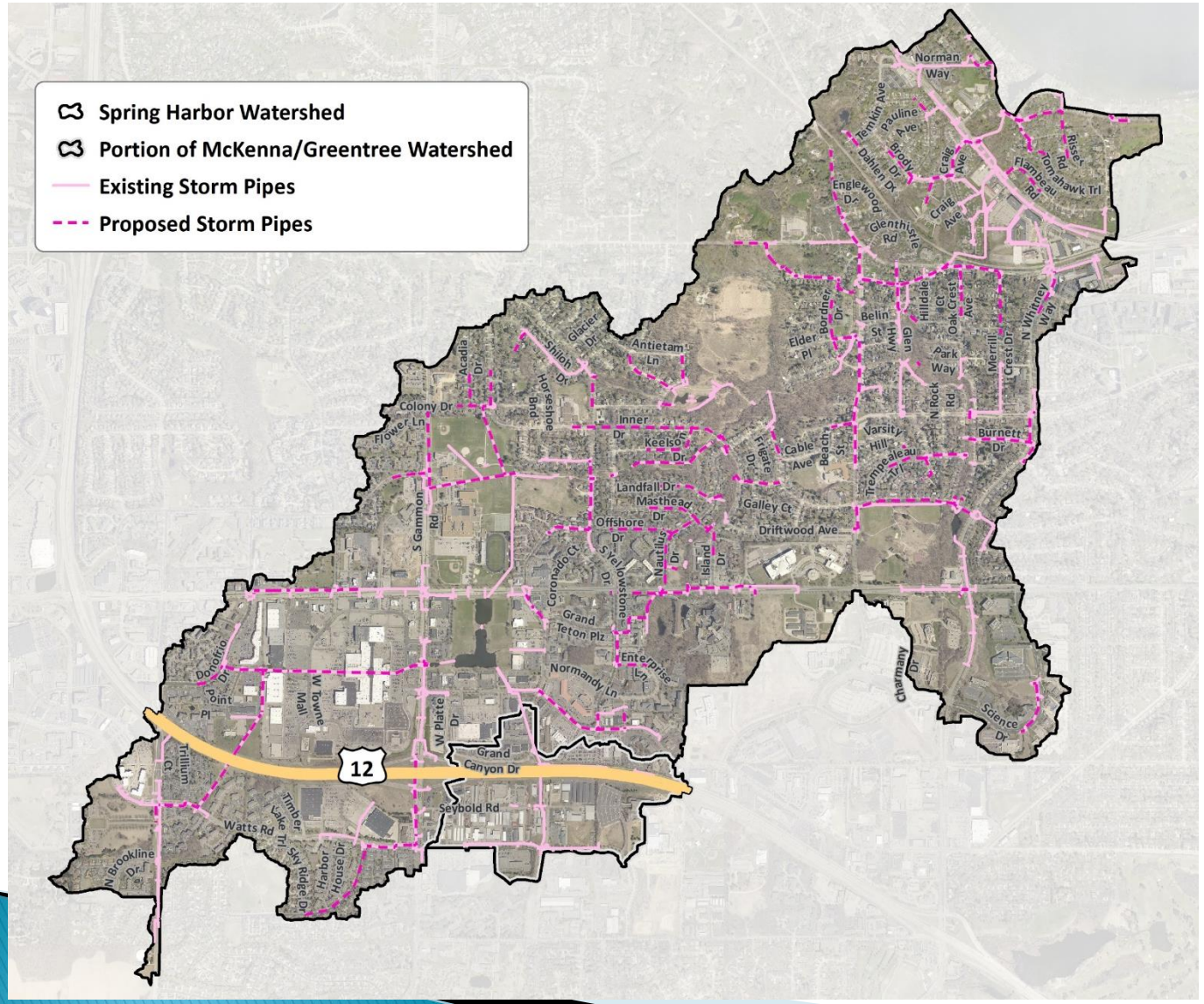
Local Storm Sewer Improvements



- Will be implemented in conjunction with street reconstruction projects

CITY OF MADISON

Local Storm Sewer Improvements



- Will be implemented in conjunction with street reconstruction projects
- Long-term process
  - Streets resurfaced about every 30 years
  - Reconstructed about every 75 years

CITY OF MADISON

Estimated Costs for Proposed Improvements

Solution	Cost
West Towne Pond	$3.7 million
Kenosha Greenway	$1.7 million
Glen Oak Hills Greenway	$1.8 million
Gettle Avenue Storm Sewer	$9.1 million
Owen Park Channel and Floodwall	$4.9 million
Masthead Greenway Ponds	$0.9 million
Local Storm Sewer Improvements	To be determined with street improvement projects

Estimated Costs for Proposed Improvements

Crossings	Cost
Yellowstone Crossing	$0.7 million
Quarterdeck Crossing	$0.7 million
Inner Drive Crossing	$0.8 million
Nautilus Drive Crossing	$1.2 million
Regent Street Crossing	$0.9 million
Masthead Drive Crossing	$0.9 million
Jetty Drive Crossing	$0.5 million

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 (23 watersheds)

Citywide Prioritization Tool

- City creating prioritization tool to help guide scheduling and budgeting of proposed solutions
- Solutions prioritized based on:
  - Flood reduction abilities
  - Racial Equity and Social Justice
  - Ability to improve emergency service access
  - Cost/available funding sources
  - Water quality benefits
  - Co-benefits to other City facilities (streets, etc.)

Citywide Prioritization Tool

- City creating prioritization tool to help guide scheduling and budgeting of proposed solutions
- Solutions prioritized
- See survey to provide input on how solutions are prioritized

Why Aren't all Targets Met for the Watershed?

- Space constraints
- Conflict with other major utilities (drinking water wells, large gas mains, etc.)
- Property ownership
- Cost impacts
- Adverse downstream impacts
- Neighborhood resistance

Next Steps

- Finalize Report
- Finalize Prioritization Process
- Budget for Projects

Budgeting Considerations

- Not all projects are yet identified throughout the City
  - Currently identified approximately 44 projects in 4 watersheds (23 watersheds will be studied citywide)
  - Must choose projects carefully

Budgeting Considerations

- Not all projects are yet identified throughout the City
- Stormwater Utility fees fund projects
  - Double digit rate increases – not sustainable
  - Without additional funding sources, only 1-2 medium to large projects can be completed in a year

Budgeting Considerations

- Not all projects are yet identified throughout the City
- Stormwater Utility fees fund projects
- Must identify additional funding mechanisms
  - Grants, appropriations, earmark funds

Budgeting Considerations

- Not all projects are yet identified throughout the City
- Stormwater Utility fees fund projects
- Must identify additional funding mechanisms
- Most projects take 1.5 – 2 years to design / permit before they can be constructed

Contact Information & Resources

- Project Manager: Jojo O'Brien, jobrien@cityofmadison.com
- Public Information Officer: Hannah Mohelnitzky, hmohelnitzky@cityofmadison.com
- Project Webpage: www.cityofmadison.com/SpringHarborWatershed
  - 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
- 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

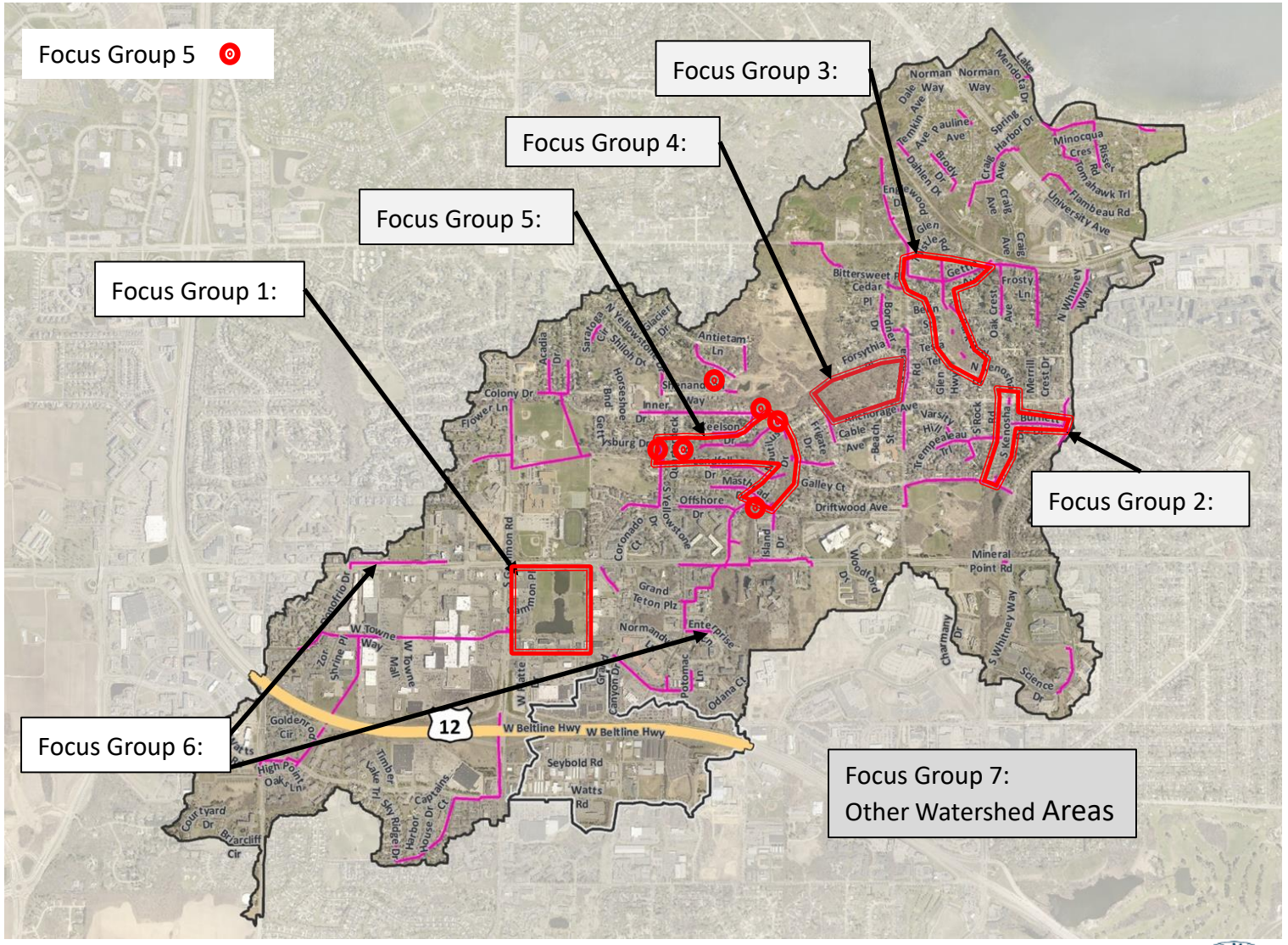
CITY OF MADISON

Focus Groups – Zoom Breakout Rooms

- Join the 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.

Focus Groups

1. West Towne Pond
2. Kenosha Greenway, Regent St Culvert, Burnette St
3. Glen Oak Hills Park Greenway/ Gettle Avenue Storm Sewer
4. Owen Park Channel and Floodwall
5. Masthead Greenway Ponds/ Greenway Crossings/ Greenway Impacts
6. Local Storm Sewer Improvements
7. Main Group-All Other Questions



Breakout Rooms

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