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	Zoom Breakout Rooms
7:45 – 8:00	Come Back Together/Wrap-Up



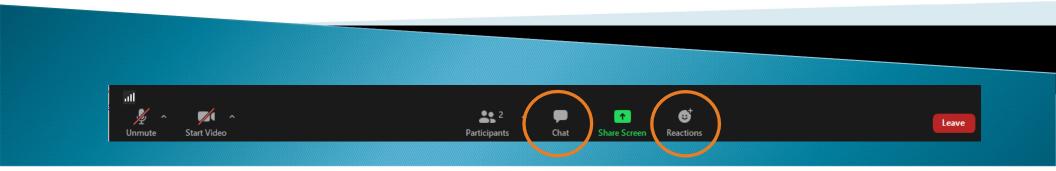


Pheasant Branch Watershed Study Public Information Meeting No. 3

by City of Madison Engineering Division February 10, 2022

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.

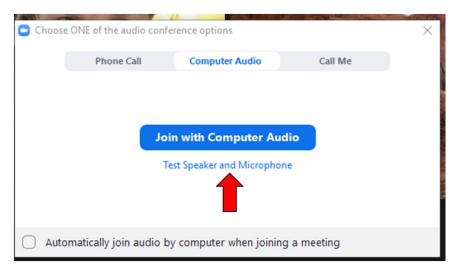
- ✓ This meeting will be <u>recorded</u> and posted to the City's project page.
- ✓ All attendees should stay <u>muted</u> to keep background noise to a minimum.
- ✓ You may use the <u>"raise hand"</u> option at the bottom, under "<u>reactions</u>" if you have something that requires immediate clarification.
- ✓ Use "<u>chat</u>" 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.

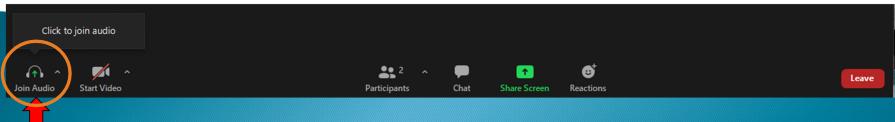


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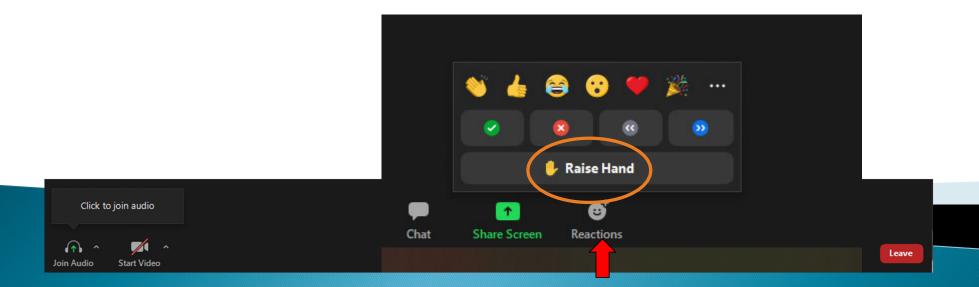
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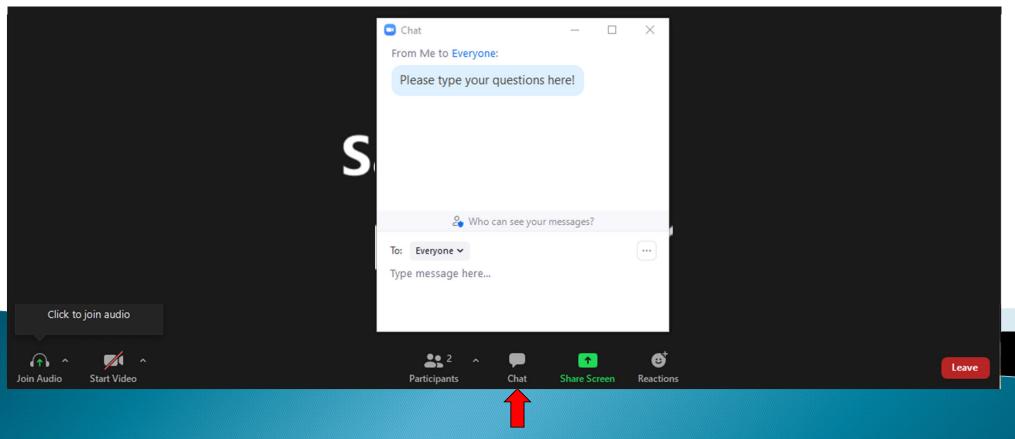




Make sure to join audio

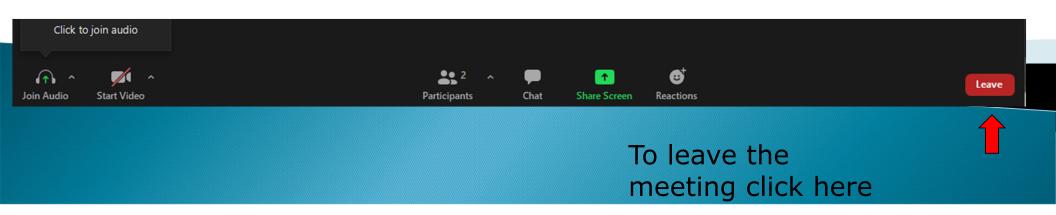


Raise your hand to be unmuted for comments or ask additional questions.



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

When you are ready to leave the meeting



Evening Overview

- Welcome (Hannah Mohelnitzky, City of Madison)
- Presentation (Caroline Burger, 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 Overview

- Definitions of commonly used terms
- Study location
- Watershed study schedule
- Flood mitigation targets
- 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



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



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- Stormwater runoff: the portion of the rainwater that does not soak into the ground



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- Stormwater inlets: grates in the ground that take in stormwater runoff; connected to the stormwater conveyance system





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





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- Model: computer software that is used to evaluate the stormwater conveyance system



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- ▶ Model: computer software that is used to evaluate the stormwater conveyance system
- ▶ Local Sewer Projects: storm sewer that is reconstructed with another already-scheduled project typically street reconstruction

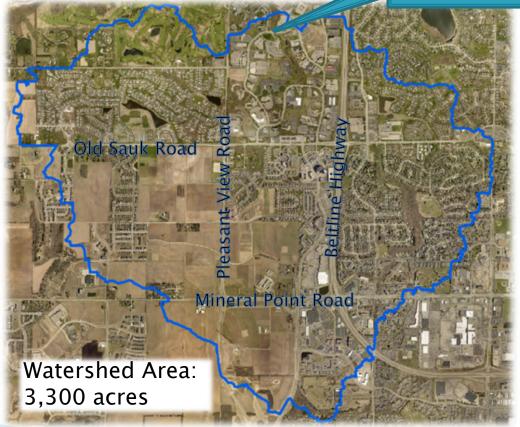


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- ▶ Model: computer software that is used to evaluate the stormwater conveyance system
- ▶ Local Sewer Projects: storm sewer that is reconstructed with another already-scheduled project typically street reconstruction
- Stand-alone Projects: Flood mitigation projects that will be constructed on their own – not tied to another already-scheduled project



Project Location

Watershed Outlet



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

This is the Pheasant Branch watershed in the City of Madison.



Schedule

Spring - Fall 2019

Create and Calibrate Model Summer 2020

2nd Public Meeting*



3rd Public Meeting













Fall 2019 -Winter 2020

> Identify Flood Impacts

Spring 2020 - Winter 2021/2022

Evaluate Solutions

Spring 2022

Finalize Study

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





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



- ▶ 10% Chance Event (4.09" rain/24 hours)
- ▶ 4% Chance Event (5.01" rain/24 hours)
 - 0.5' at Centerline of Road (roads passable for emergency vehicles)



- ▶ 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)



- ▶ 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



- Not all targets may be met for all areas of the watershed
 - Problems are complex mitigating factors discussed later in the presentation
 - For the Pheasant Branch watershed with the proposed solutions, targets were met in most of the watershed



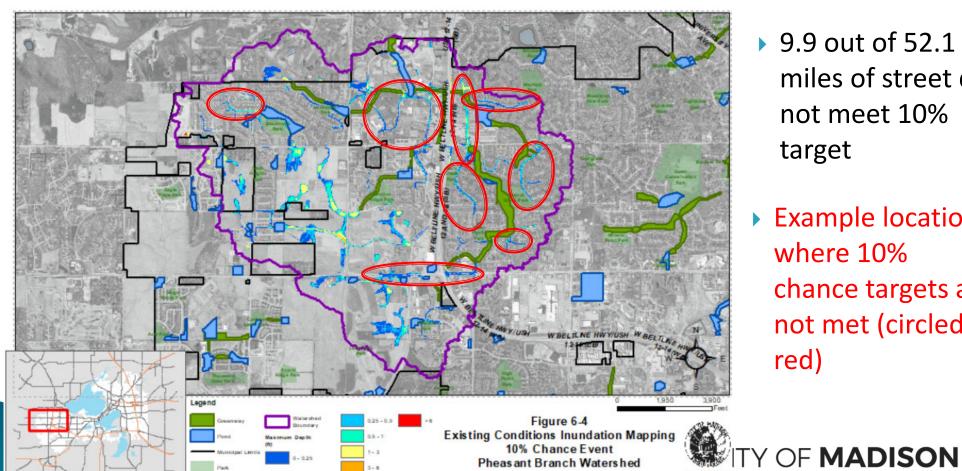
INUNDATION MAPPING DISCLAIMER

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.



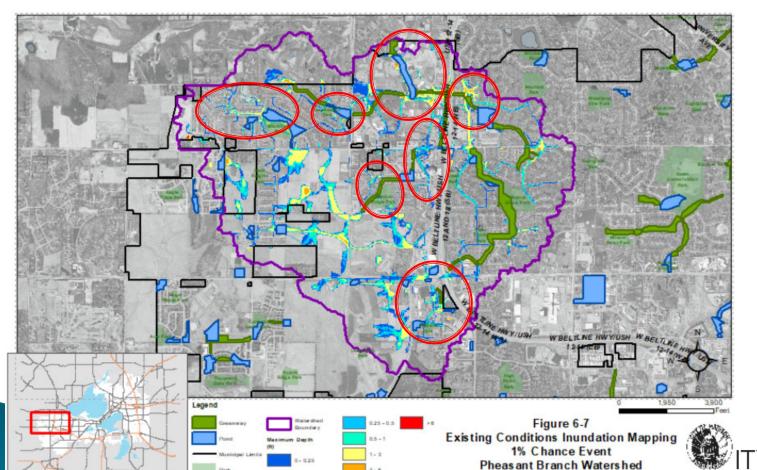
10% Chance Existing Inundation Mapping



- 9.9 out of 52.1 miles of street do not meet 10% target
- Example locations where 10% chance targets are not met (circled in red)



1% Chance Existing Inundation Mapping



- 113 out of 2,920 structures do not meet 1% chance target
- Example Locations where 1% chance targets are not met (circled in red)



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



- 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



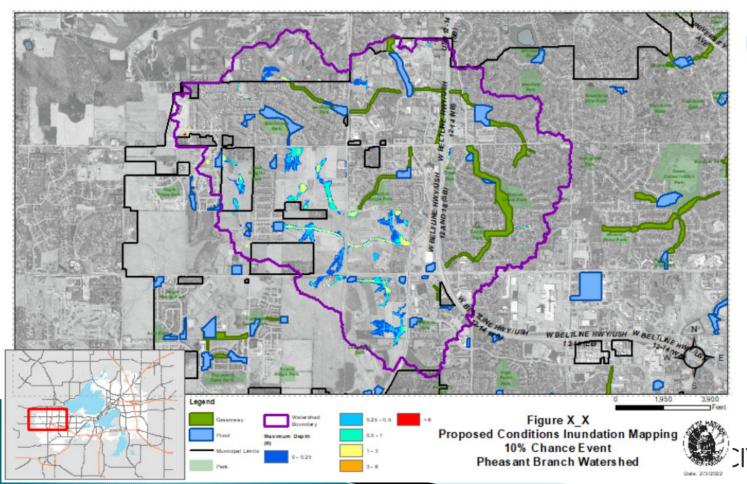
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- Met with the Alders for each district



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- Met with the Alders for each district
- Meeting with you tonight



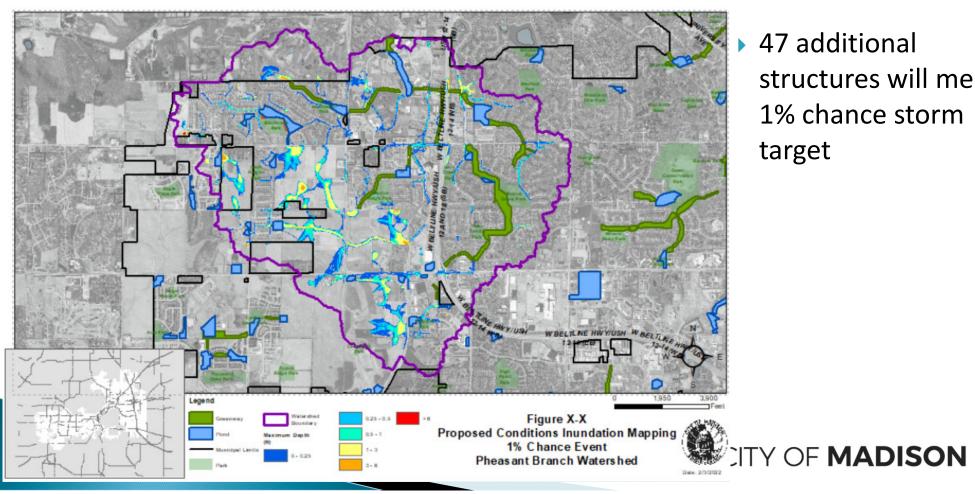
10% Chance Proposed Inundation Mapping



6.6 additional miles of streets will meet 10% target



1% Chance Proposed Inundation Mapping



47 additional structures will meet 1% chance storm target



Proposed Solutions – Concepts Only*

- Old Sauk Trails Business Park Pond 8. and Greenways
- Pleasant View Road Reconstruction*
- 3. Swallowtail Pond Reconstruction*
- 4. Blackhawk Pond Reconstruction
- Wexford Pond and Greenway Reconstruction
- Sauk Creek Greenway Reconstruction
- 7. Target Area Relief Sewer

- 8. Old Sauk Road/Westfield Intersection Reconstruction
- Greenway Crossing Reconstruction
- 10. Local Road Sewer Improvements
- 11. Regional Pond Land Reserves
- 12. Terrace Inlet Installation
- 13. MGO 37 Recent Revisions
- 14. Impact on Middleton
- 15. Green Infrastructure Analysis
- *Only solutions in design phase WisDOT projects

All Inundation Depths on Following Proposed Solutions Sides are for 1% Chance Event

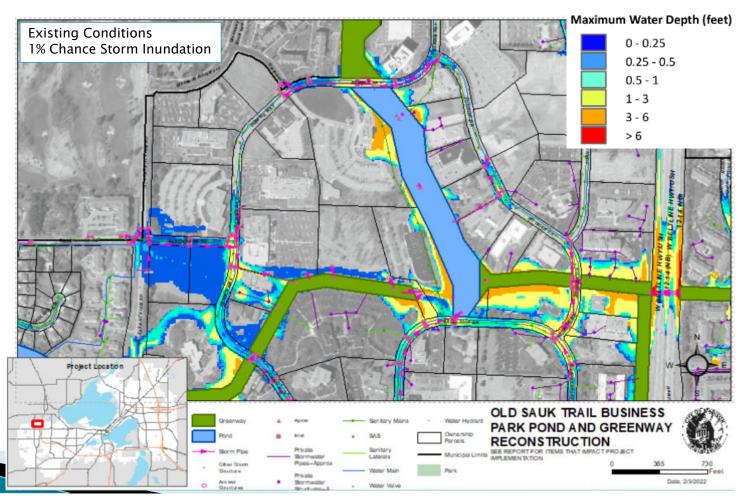




1. Old Sauk Trails Business Park Pond and Greenway Reconstruction

Flooding Issues

- 10% chance storm road impassability
- 1% chance storm inundation of structures



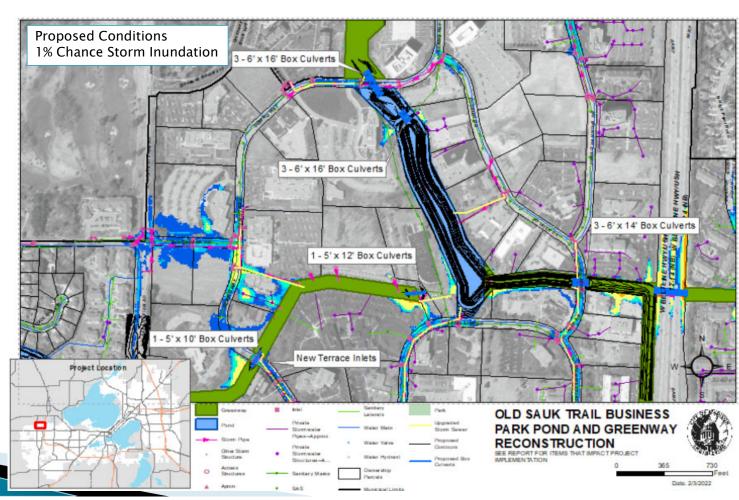
1. Old Sauk Trails Business Park Pond and Greenway Reconstruction

Proposed Improvements

- Excavate existing pond area
- Re-construct east greenways
- Enlarge culverts

Reduced Flood Risk

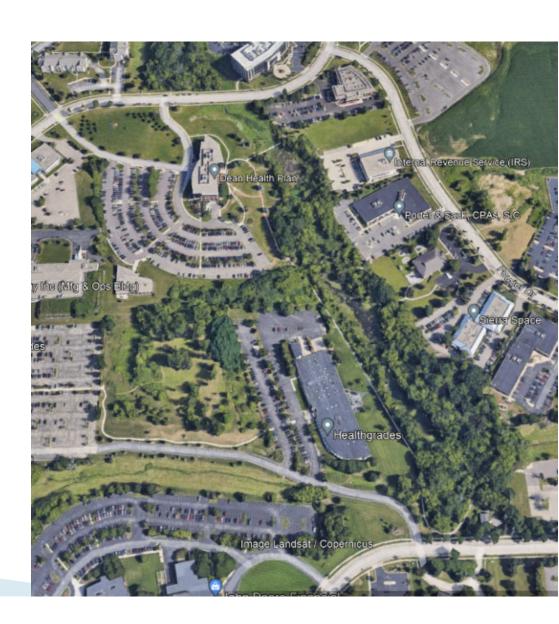
- Removes 6 structures from 1% chance flood risk
- Improves street passability for 1,950 feet of streets
- Reduces flood risk of downstream properties



1. Old Sauk Trails Business Park Pond and Greenway Reconstruction

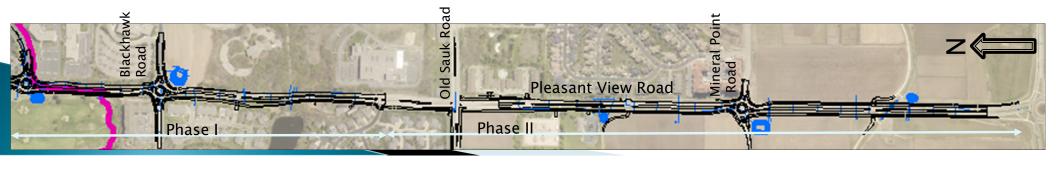
Challenges

- Sanitary Sewer conflicts
- Trees
- Cost
 - \$9,600,000
 - Applied for FY2020 FEMA BRIC Grant (not successful)
 - Re-applied for FY2021 FEMA BRIC Grant



2. Pleasant View Road Reconstruction

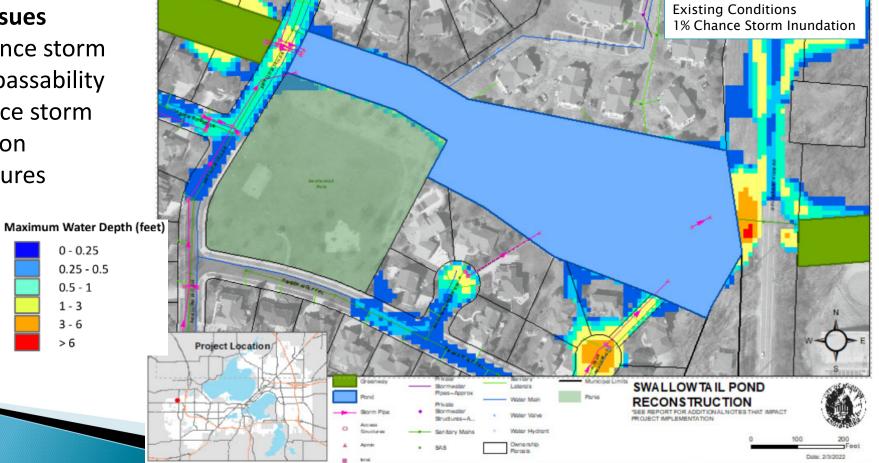
- Phase I: University Avenue (Middleton) to Old Sauk Road (Madison)
- Phase II: Old Sauk Road to Mineral Point Road
- Separate Public Outreach for Project
- > Stormwater sized to meet current flood mitigation targets
- Bidding for Phase I: May 2022
- Phase I Construction start late July/early August; 2022 work is generally prep work for 2023
- > Phase I Construction scheduled to be completed November 2023



3. Swallowtail Pond Reconstruction

Flooding Issues

- 10% chance storm road impassability
- 1% chance storm inundation of structures



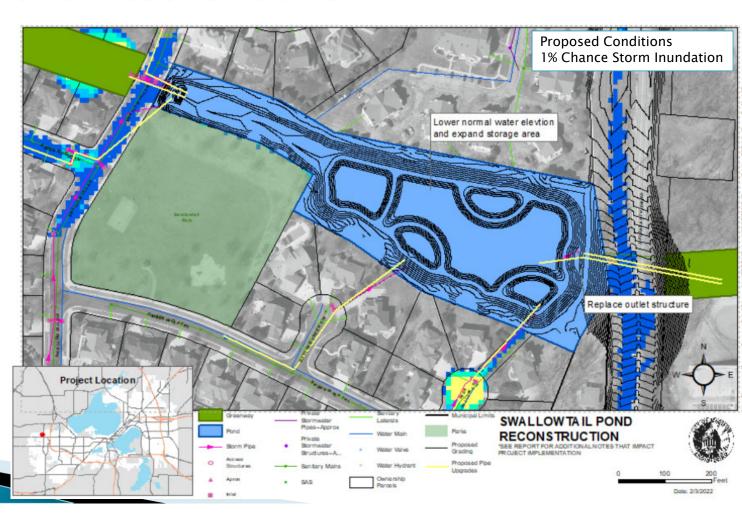
3. Swallowtail Pond Reconstruction

Proposed Improvements

- Excavate existing pond area
- Re-construct outlet structure

Reduced Flood Risk

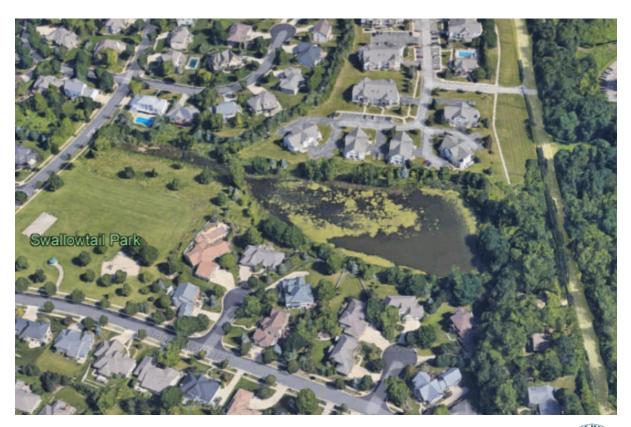
- Removes 4 structures from 1% chance flood risk
- Improves street passability for 140 feet of streets
- Reduces flood risk of downstream properties



3. Swallowtail Pond Reconstruction

Challenges

- Design for maintenance crew access
- Sanitary sewer relocation/lowering
- PIM for Pond on October 13, 2021
- Currently under final design –
 Construction documents at 99%
- Construction Start: Determined by Contractor

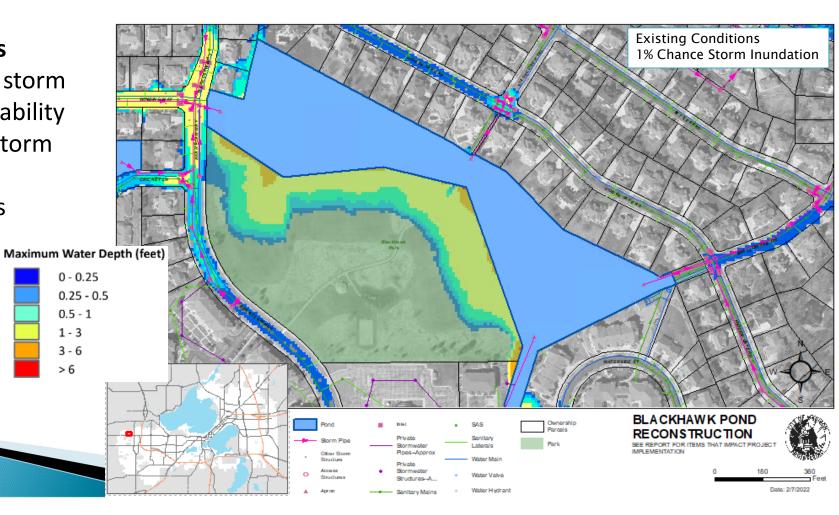




4. Blackhawk Pond Reconstruction

Flooding Issues

- 10% chance storm road impassability
- 1% chance storm inundation of structures



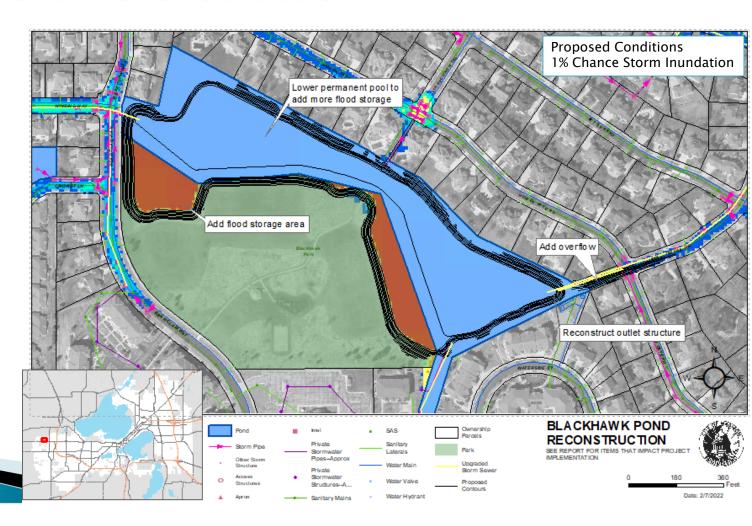
4. Blackhawk Pond Reconstruction

Proposed Improvements

- Lower pond normal pool
- Add storage
- Re-construct outlet structure
- Add pond overflow

Reduced Flood Risk

- Removes 3 structures from 1% chance flood risk
- Improves street passability for 1,650 feet of streets
- Reduces flood risk of downstream properties



4. Blackhawk Pond Reconstruction

Challenges

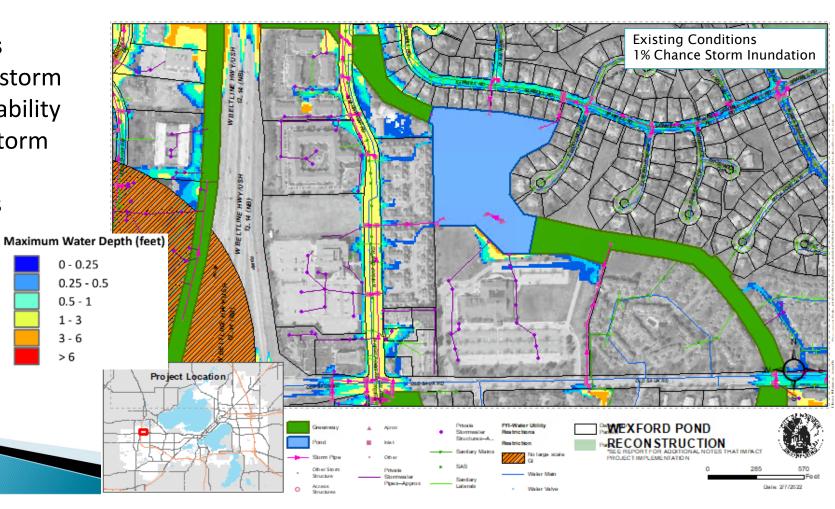
- Impacts City of Madison Parks Property
- Overflow requires modification to street
- Cost
 - \$6,900,000
 - City looking for grant opportunities



5. Wexford Pond Reconstruction

Flooding Issues

- 10% chance storm road impassability
- 1% chance storm inundation of structures



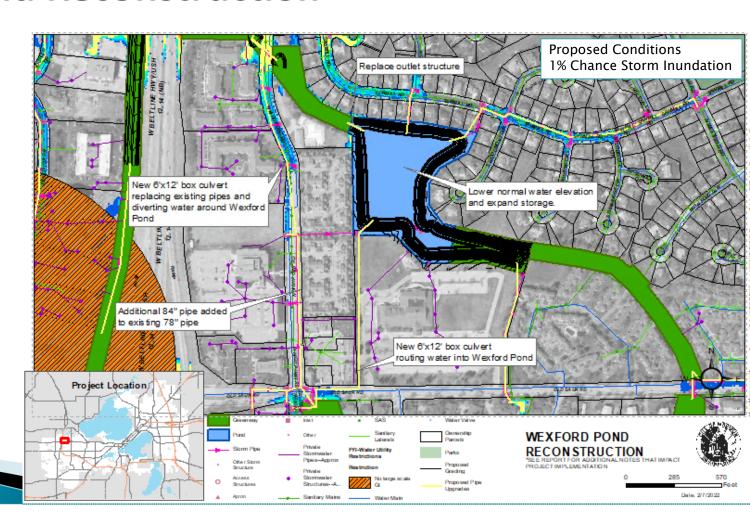
5. Wexford Pond Reconstruction

Proposed Improvements

- Lower pond normal pool
- Add storage
- Re-construct outlet structure
- Add pond bypass

Reduced Flood Risk

- Removes 5 structures from 1% chance flood risk
- Improves street passability for 436 feet of streets
- Reduces flood risk of downstream properties



5. Wexford Pond Reconstruction

Challenges

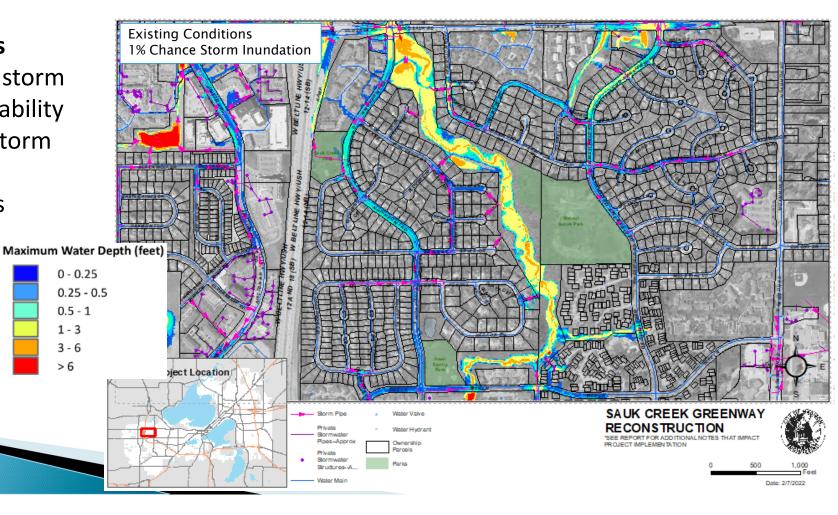
- Construction and Maintenance Access
- Outlet capacity limited by downstream conditions
- Cost: \$4,800,000
- Immediate project will be dredging only – in design
- PIM for dredging will be held soon
- Watershed study solution constructed after downstream conditions addressed



6. Sauk Creek Greenway Reconstruction

Flooding Issues

- 10% chance storm road impassability
- 1% chance storm inundation of structures



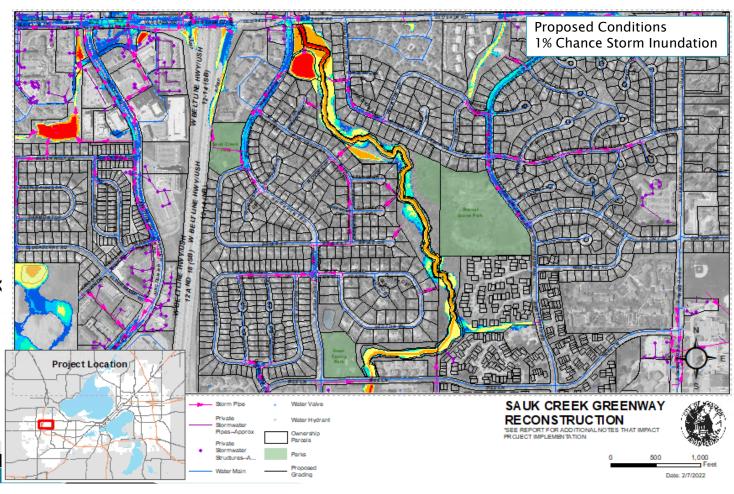
6. Sauk Creek Greenway Reconstruction

Proposed Improvements

- Regrade main channel
- Stabilize channel
- Add some additional storage

Reduced Flood Risk

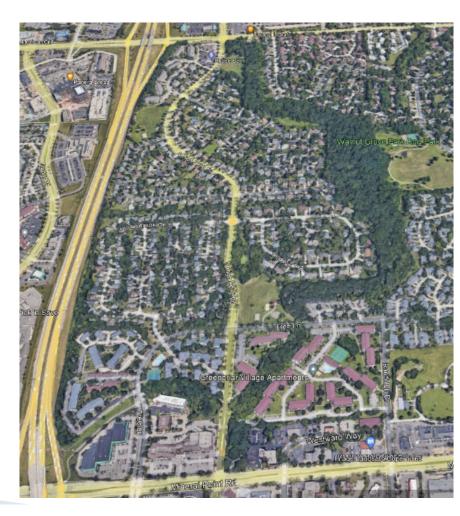
- Removes 2 structures from 1% chance flood risk
- Reduces flood risk of downstream properties



6. Sauk Creek Greenway Reconstruction

Challenges

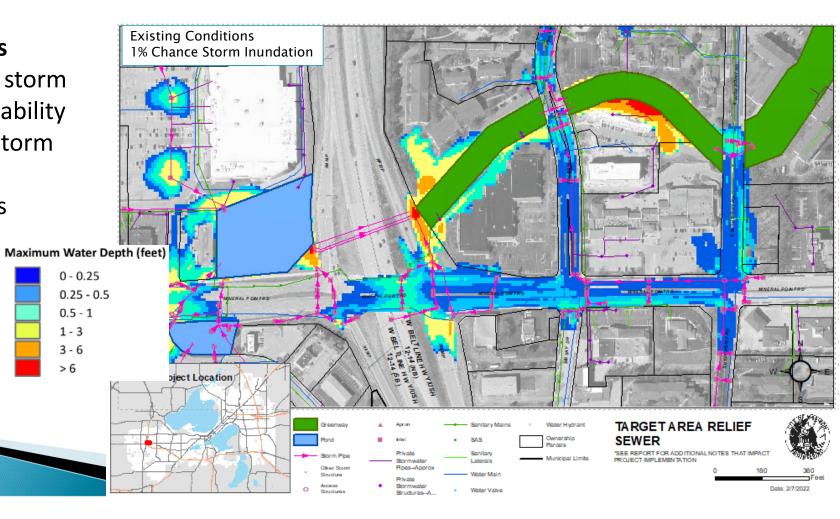
- Construction and Maintenance Access
- Quality tree preservation
- Accommodate additional flow as watershed develops
- Cost: \$4,000,000
- Project in design
 - Collecting survey for detailed design
 - Conceptual design from study to be used as a starting point
 - > PIM for project will be held soon



7. Target Area Relief Sewer

Flooding Issues

- 10% chance storm road impassability
- 1% chance storm inundation of structures



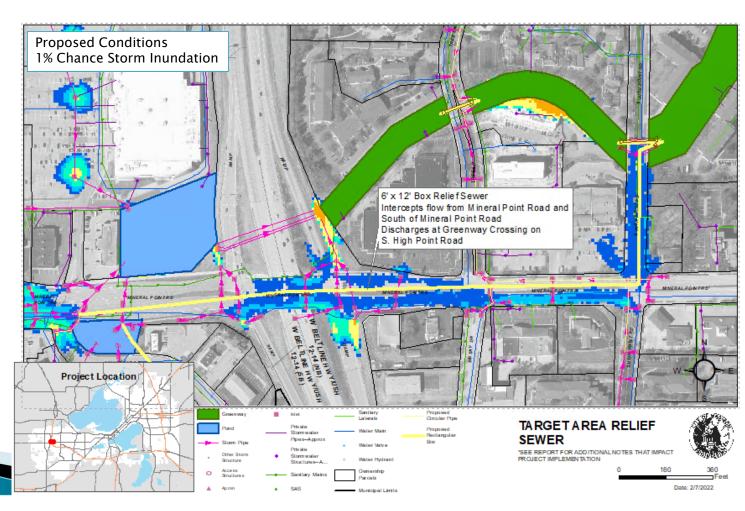
7. Target Area Relief Sewer

Proposed Improvements

 Install box culvert to bypass two trunk sewers around Target Pond

Reduced Flood Risk

- Removes 1 structure from 1% chance flood risk
- Improves street passability for 150 feet of streets
- Reduces flood risk of upstream properties



7. Target Area Relief Sewer

Challenges

- Major arterial road
- Portion of construction occurs under Beltline
- Utility conflicts
- Cost: \$11,100,000

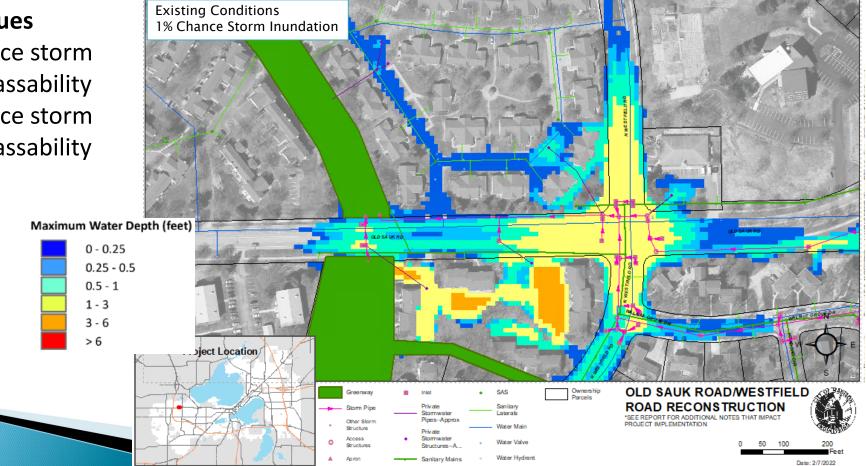




8. Old Sauk Road/Westfield Road Intersection Reconstruction

Flooding Issues

- 10% chance storm road impassability
- 25% chance storm road impassability



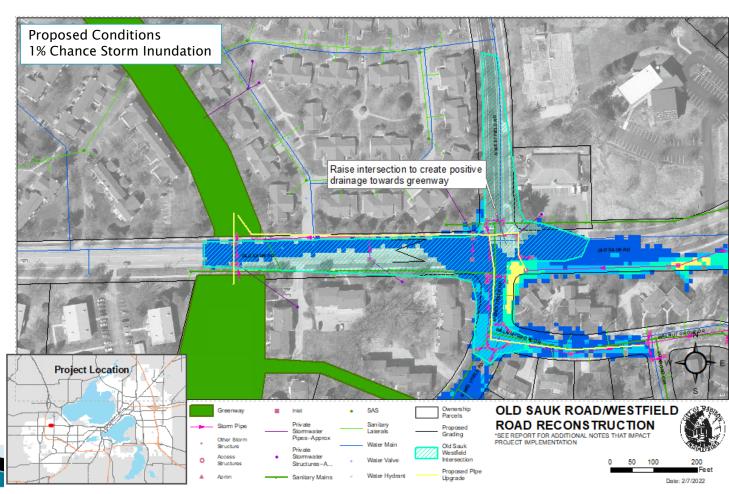
8. Old Sauk Road/Westfield Road Intersection Reconstruction

Proposed Improvements

- Raise intersection by 1-2 feet
- Upsize storm sewer serving intersection

Reduced Flood Risk

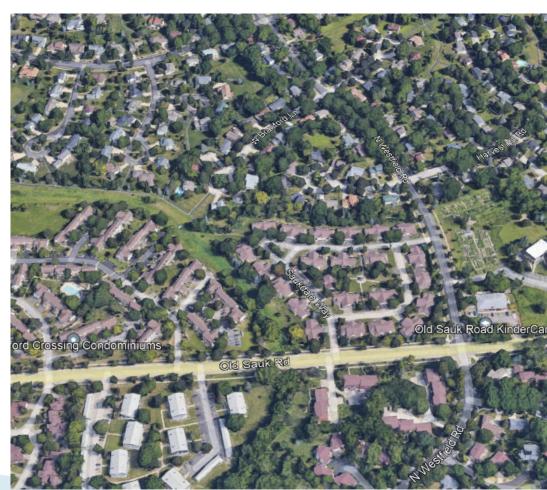
- Removes 3 structures from flood risk
- Improves street passability for 670 feet of streets



8. Old Sauk Road/Westfield Road Intersection Reconstruction

Challenges

- Major arterial road
- Minor driveway conflicts
- Utility conflicts
- Cost: \$1,900,000

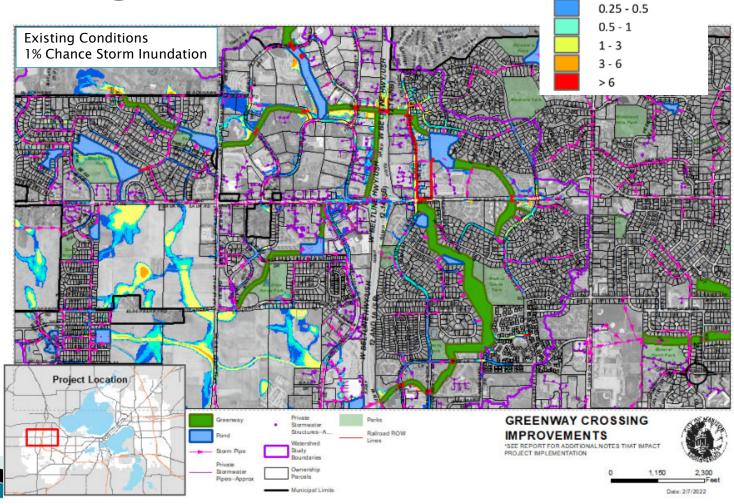


9. Greenway Crossing Reconstruction

Flooding Issues

Road overtopping





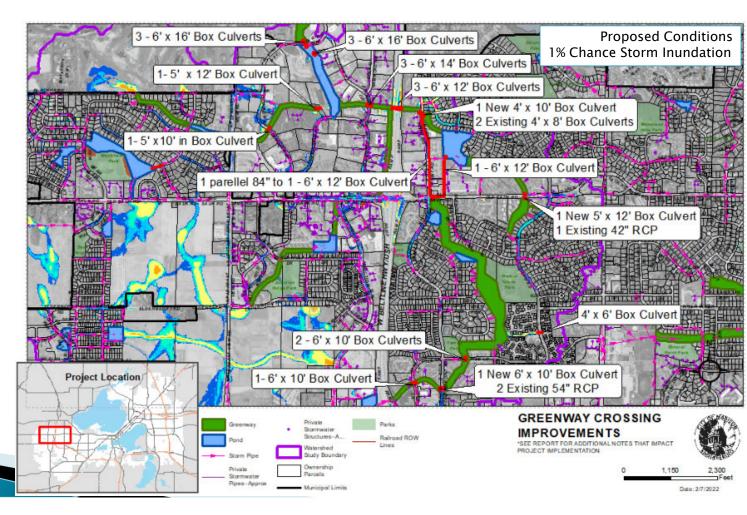
Maximum Water Depth (feet)

0 - 0.25

9. Greenway Crossing Reconstruction

Objective

 Eliminate roadway overtopping in 1% chance event



9. Greenway Crossing Reconstruction

Challenges

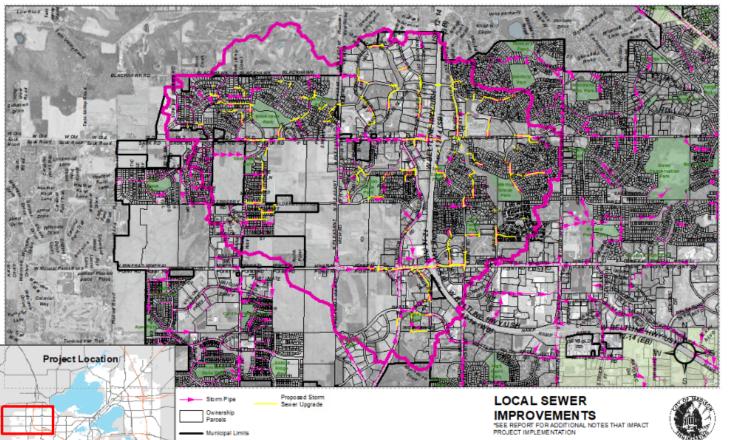
- Utility conflicts
- Depth of greenway to road
- Cost: \$400,000 \$9,800,000







10. 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





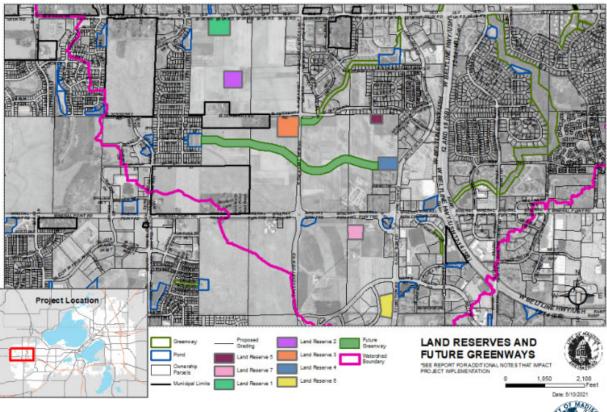
11. Theoretical Regional Pond Land Reserves

A shape of land to store current water that ponds

Land Reserve	Unintended Detention Volume (ac-ft)	Area of Land ¹	Area of Land with Buffer ²
1	17.1	5.7	6.2
2	12.9	4.3	4.8
3	18.9	6.3	6.8
4	10.4	3.5	3.9
5	4.5	1.5	1.8
6	12.4	4.1	4.6
7	9.4	3.1	3.5
¹ Assumir	ng 3 feet deep		

² 4:1 side slopes plus 10 foot outer buffer

 Ordinance requires land developers account for this existing water when land is developed

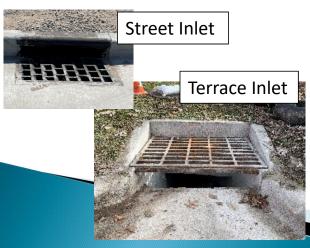


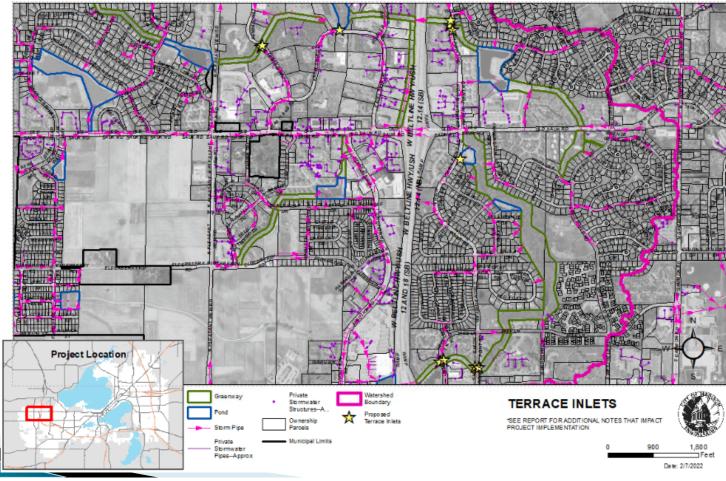




12. Terrace Inlet Installation

- ▶ Installed in 2021
- Locations chosen
 based on where
 stormwater cannot
 discharge to channels





13. Municipal Government Ordinance (MGO) 37 Recent Revisions

- New Development
 - Added 0.5% chance detention requirement
 - Increased sizing standards for greenway crossings
 - Low building openings for critical areas
- Re-Development
 - Reduce 10% chance peak flow by 15%
 - Reduce 10% chance runoff volume by 5%
 - Green Infrastructure required
 - Low building openings for critical areas
- Utilize models created for watershed studies



14. Impact on Middleton

- This watershed discharges into Middleton
- Target:
 - No adverse impacts downstream of watershed
- Model results show:
 - Ultimate proposed peak water surface elevation less than existing
 - Ultimate proposed peak flow equal to or less than existing

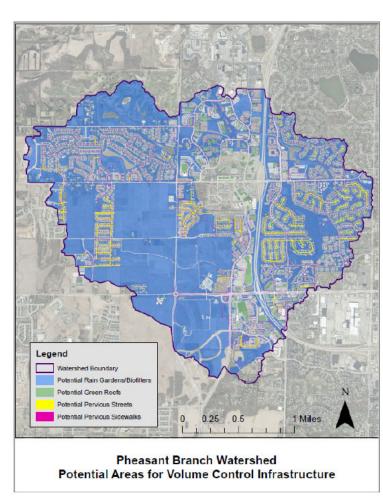




Watershed

15. Green Infrastructure Analysis

- Evaluated Green Infrastructure as Flood Reduction solution
- Found that significant Green Infrastructure needs to be installed to meet flood reduction targets
 - This is because Green Infrastructure is generally meant for smaller storms, not flood storms
- The cost to install Green Infrastructure to meet flood targets is approximately twice as much as Grey Infrastructure in Pheasant Branch Watershed
- Will continue to advocate for Green Infrastructure but sole purpose will not be Flood Control



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)



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)
- 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.)

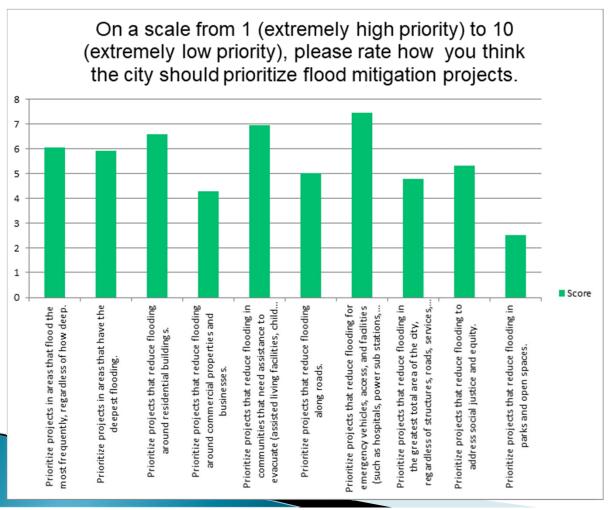


Citywide Prioritization Tool

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 - Will include all flood mitigation solutions in the City (22 watersheds)
- 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.)
- 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 Pheasant Branch Project

Webpage



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 Draft Report
- Post Draft Final Report for 30-day Public Comment
- > Finalize Report
- > Finalize Prioritization Process
- Budget for Projects
- > Once becomes Budgeted Project
 - Then start design and separate project-specific outreach





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- Most projects take 1.5 2 years to design / permit before they can be constructed



Contact Information & Resources

- Project Manager: Caroline Burger, cburger@cityofmadison.com
- Public Information Officer: Hannah Mohelnitzky, hmohelnitzky@cityofmadison.com
- Project Webpage: <u>www.cityofmadison.com/PheasantBranchWatershed</u>
 - 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



Breakout 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.





Breakout Groups

- Old Sauk Trails Business Park Pond and Greenway Reconstruction
- Pleasant View Road/Swallowtail Pond
- 3. Blackhawk Pond Reconstruction
- Wexford Pond and Greenway Reconstruction
- 5. Sauk Creek Greenway Reconstruction
- 6. Target Area Relief Sewer
- 7. All Other Areas



