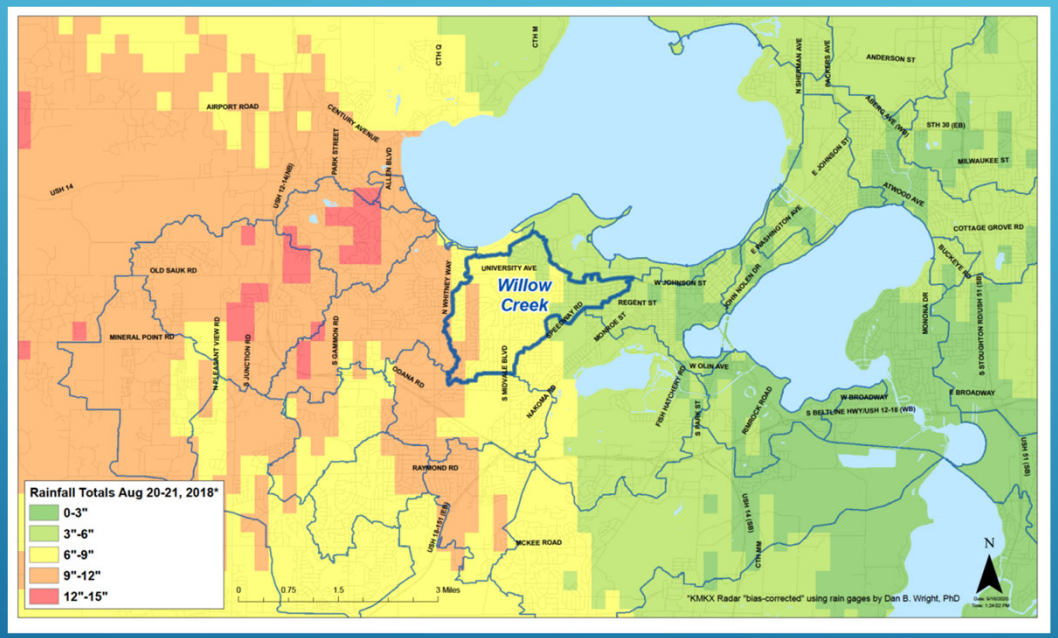
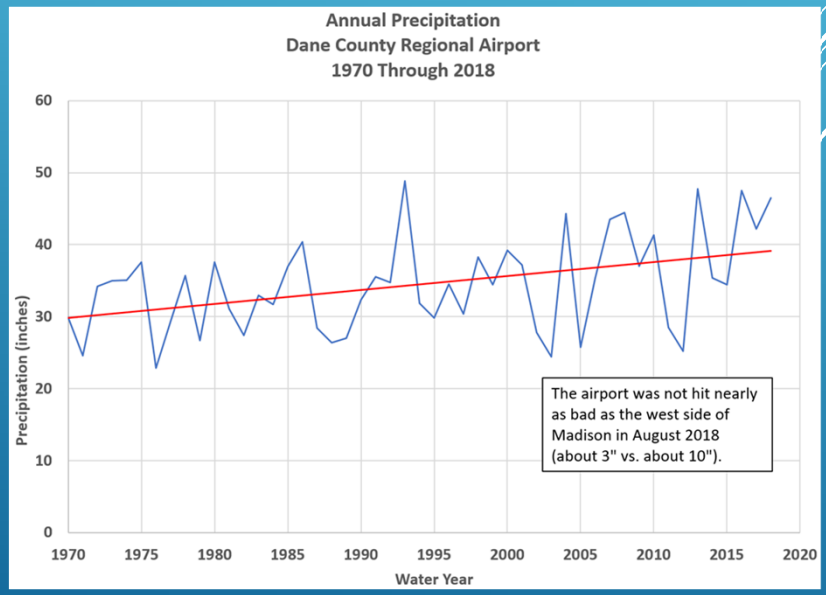
BRIEF OVERVIEW OF WATERSHED STUDY PROGRAM

- 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

Greentree/McKenna Watershed Study Solutions and Report

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

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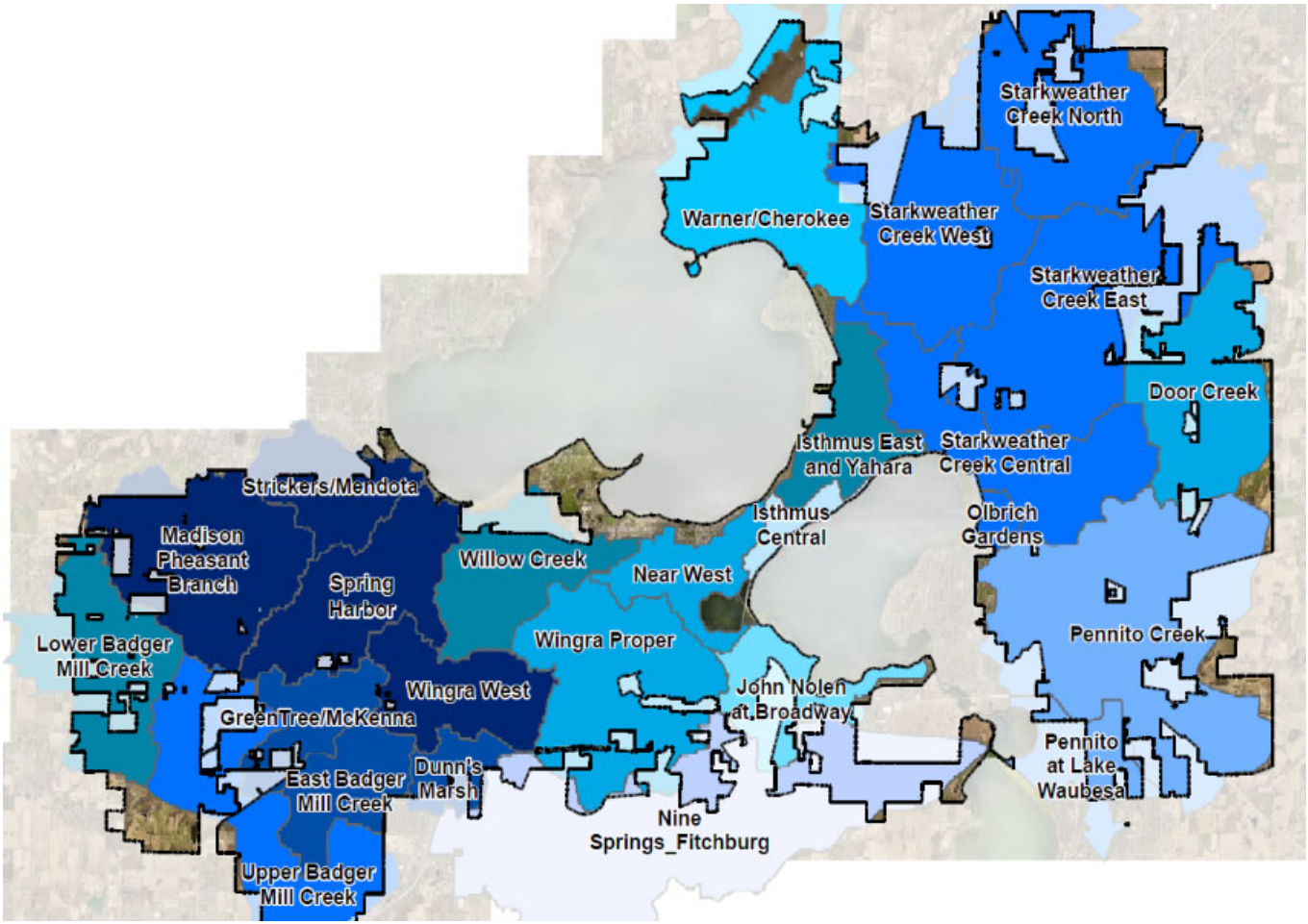
Watershed Study Phasing



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

Summer – Fall 2020

Identify Flood Impacts

Fall 2020

*2nd Public Meeting**

Winter – Fall 2021

Evaluate Solutions

Spring 2022

3rd Public Meeting

Fall 2022 – 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: 10/23/19
- PIM 2: 10/1/20
- Mayor's Planning Team: 3/10/22
- PIM 3: 5/12/22
- Report Final Draft Finished: 11/2/22
- Report Public Comment Period: 1/5/23 – 2/6/23
- BPC: 4/19/23
- BPW: 5/17/23
- FINAL REPORT:

https://www.cityofmadison.com/engineering/documents/projects/Greentree-McKenna-Watershed-Study-DRAFT-Final-Report.pdf

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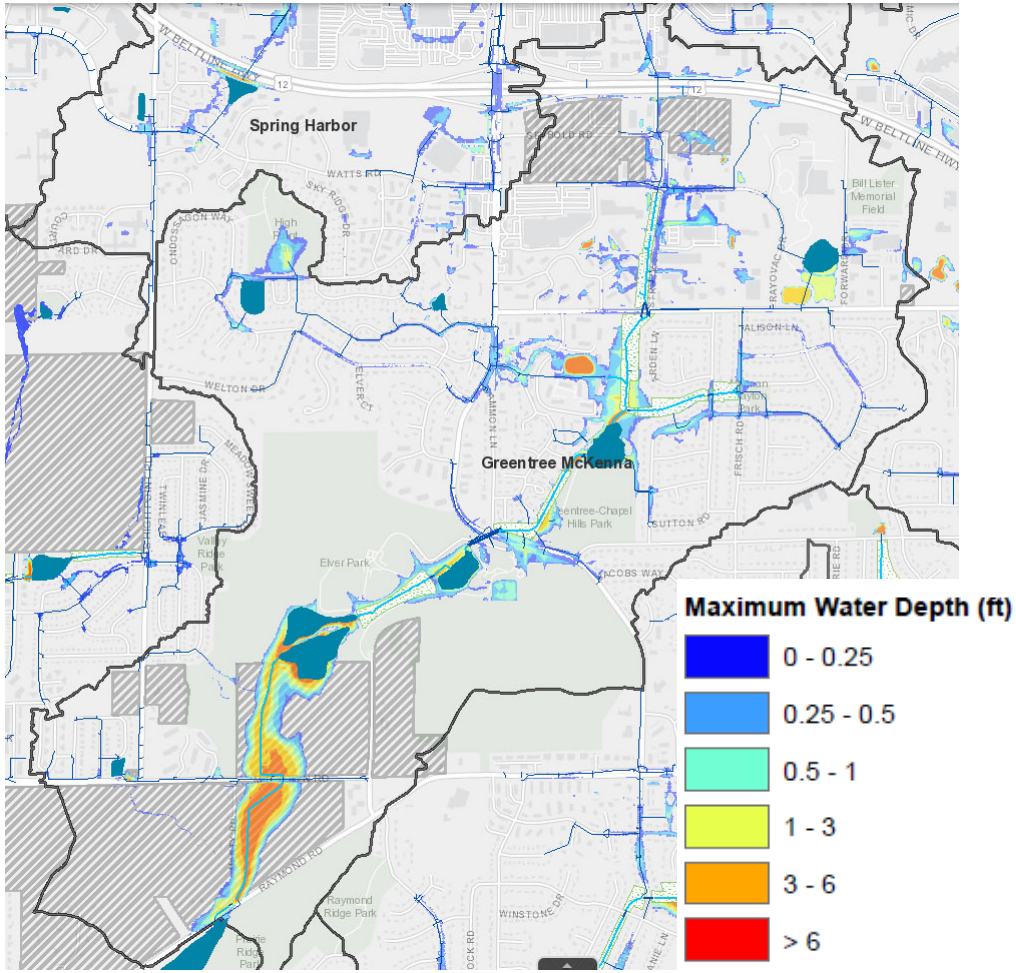
Existing Conditions 1% Chance Event Inundation Mapping



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Proposed Solutions

1. Struck Street, Seybold Road, and Watts Road Reconstruction
2. Forward Drive Reconstruction
3. Schroeder Road Reconstruction
4. New Washburn Way and S Gammon Road Reconstruction
5. Valhalla Way and N Holt Circle Reconstruction
6. High Point Estates Pond Reconstruction
7. Chapel Hill Road and Greenway Reconstruction
8. Piping Rock Road and Laurie Drive Reconstruction
9. McKenna Boulevard Storm Sewer Improvements
10. Elver Park Greenway Reconstruction
11. Marty Road/Mid Town Road Regional Pond

Results

- **10% Chance Storm Event – Target: Eliminate storm sewer surcharge**
  - Existing: 189 out of 264 storm structures do not meet the target
  - Proposed: 98 out of 264 storm structures do not meet the target
- **4% Chance Storm Event – Target: Maintain drivability of city streets**
  - Existing: 2.7 out of 20.8 street miles do not meet the target
  - Proposed: 0.5 out of 20.8 street miles do not meet the target
- **1% Chance Storm Event – Target: No structure flooding**
  - Existing: 48 out of 1,325 buildings do not meet the target
  - Proposed: 20 out of 1,325 buildings do not meet the target
- **1% Chance Storm Event – Target: Pass flow through greenway crossings**
  - Existing: 4 out of 7 greenway crossings do not meet the target
  - Proposed: all 7 greenway crossings DO meet the target

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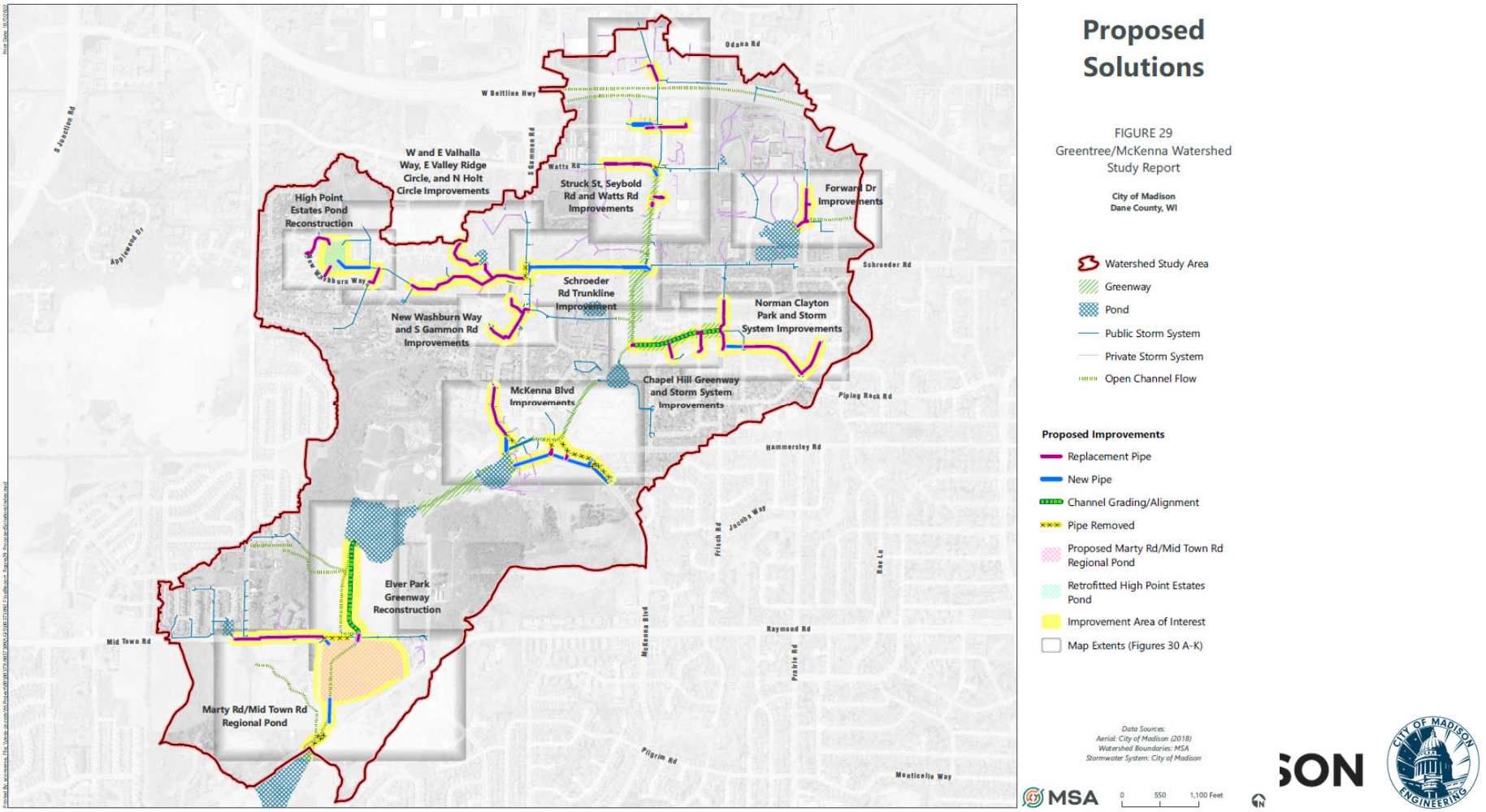
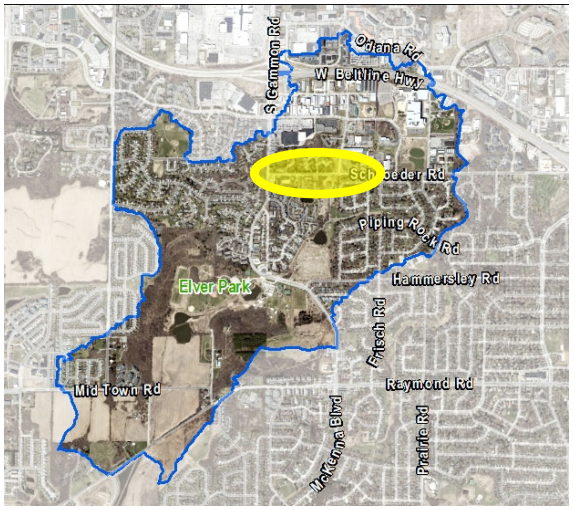
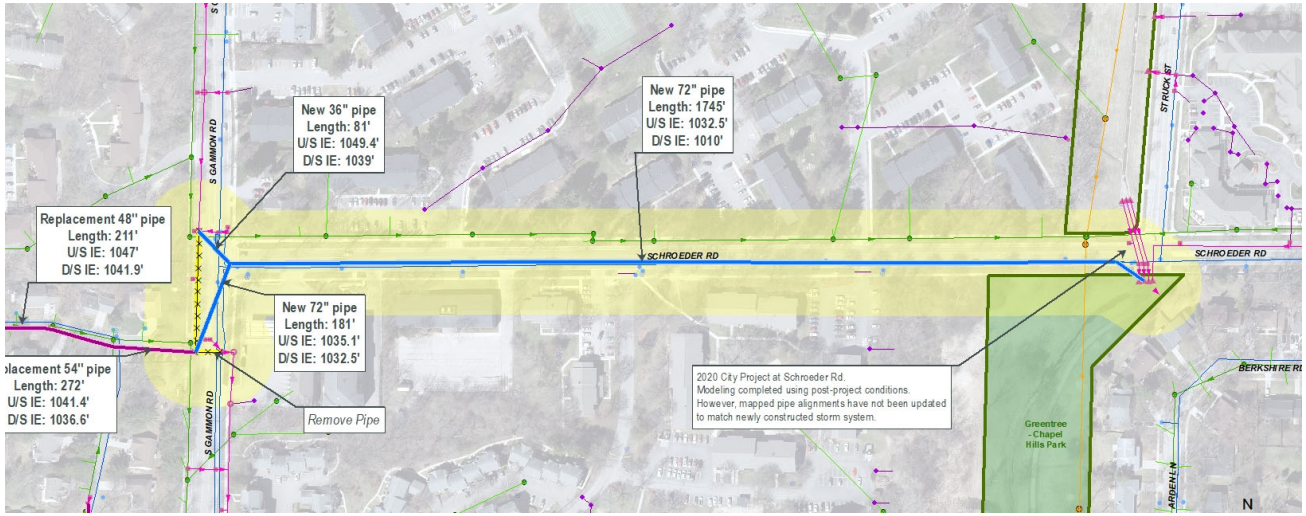
Recommended Solutions



Schroeder Road Reconstruction





- **Goal: Reduce flooding during 10%, 4%, and 1% events**
- New storm sewer on Schroeder Rd.
- Relieves undersized storm sewer to the south
- Removes 15 structures from flooding
- Greatly reduces street ponding
- Est. cost - $2.10 million

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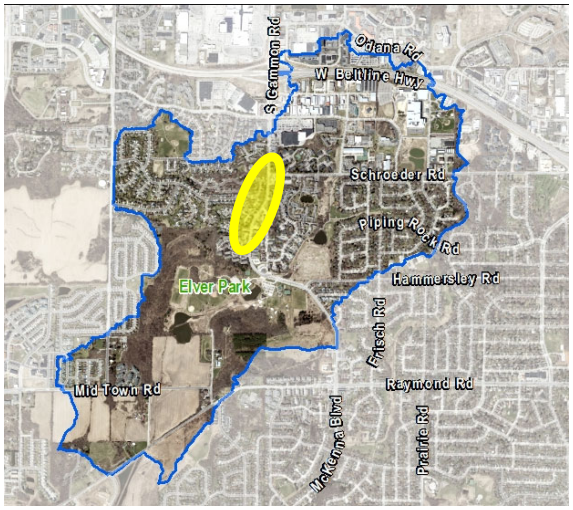
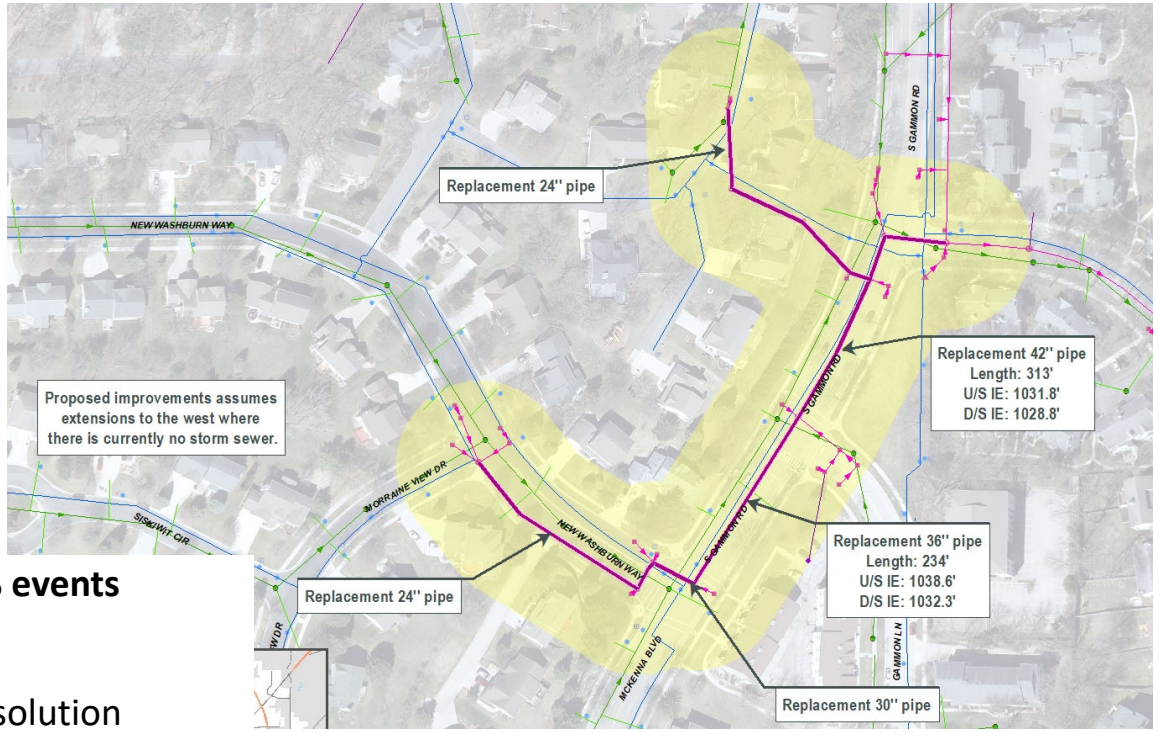
New Washburn Way and S Gammon Rd. Reconstruction





- **Goal: Reduce flooding during 10% and 4% events**
- Increase storm sewer size
- Performance is contingent upon previous solution
- Greatly reduces street ponding for more frequent events
- Est. cost - $790,000

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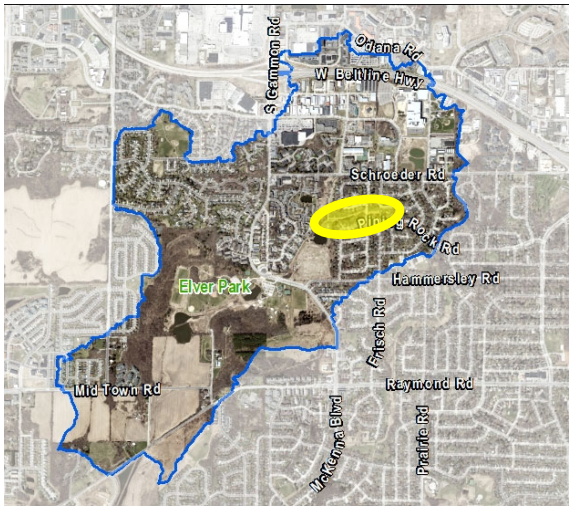
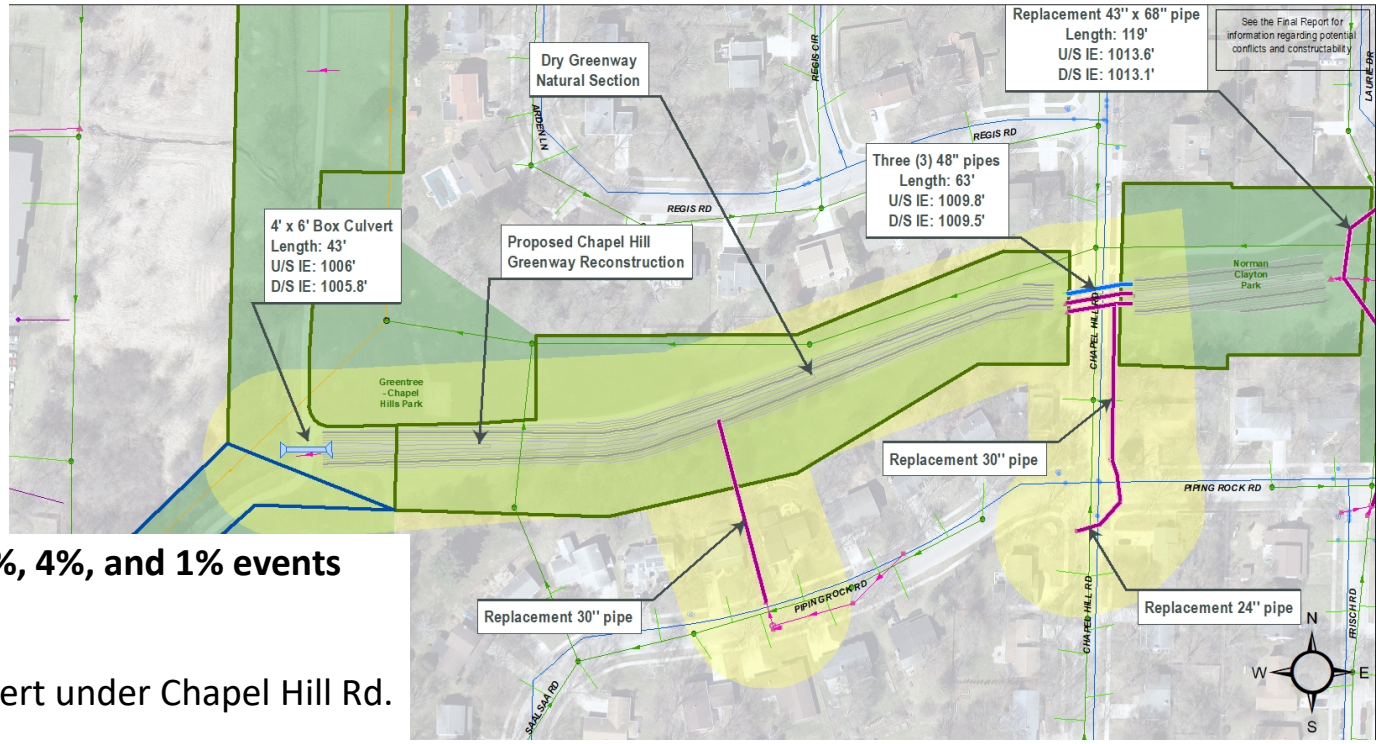
Chapel Hill Road and Greenway Reconstruction





- **Goal: Reduce flooding during 10%, 4%, and 1% events**
- Increase storm sewer size
- Increase culvert size and add culvert under Chapel Hill Rd.
- Excavate greenway channel
- Removes 6 structures from flooding
- Eliminates road overtopping and greatly reduces ponding
- Est. cost - $780,000

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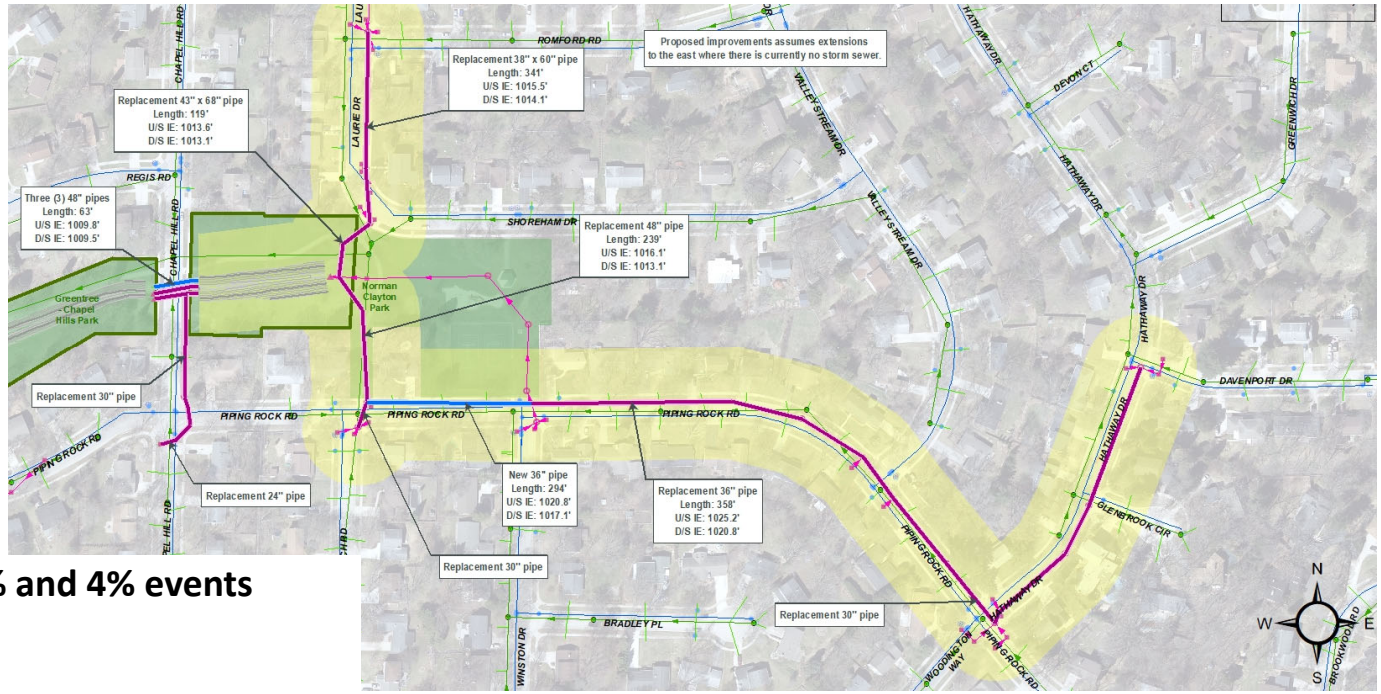
Piping Rock Road and Laurie Drive Reconstruction



- **Goal: Reduce flooding during 10% and 4% events**
- Increase storm sewer size
- Add new pipe on Piping Rock Rd.
- Eliminates street ponding for more frequent events
- Est. cost - $1.99 million

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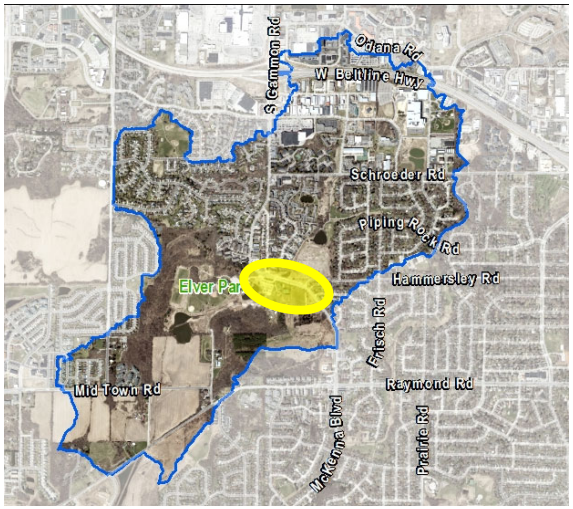
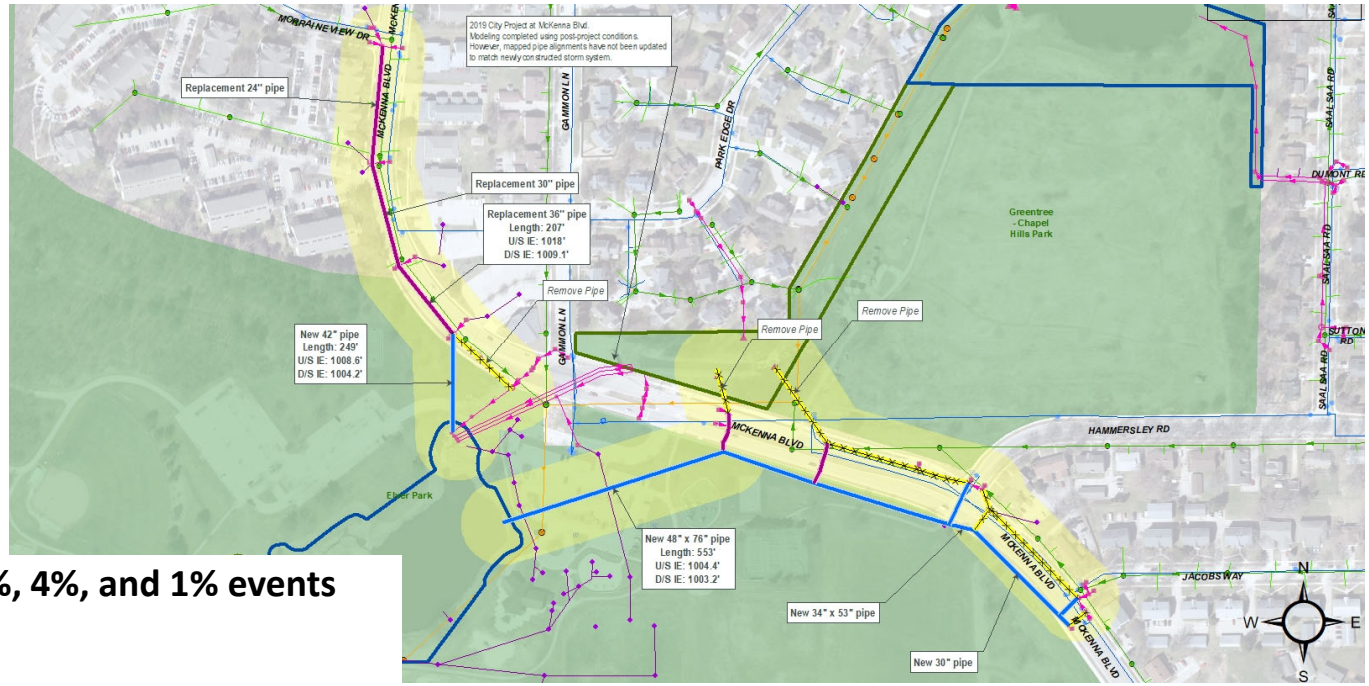
McKenna Boulevard Storm Sewer Improvements





- **Goal: Reduce flooding during 10%, 4%, and 1% events**
- Increase storm sewer size
- Add new pipes
- Removes 1 structures from flooding
- Greatly reduces street ponding for more frequent events
- Est. cost (N) - $630,000
- Est. cost (S) - $1.38 million

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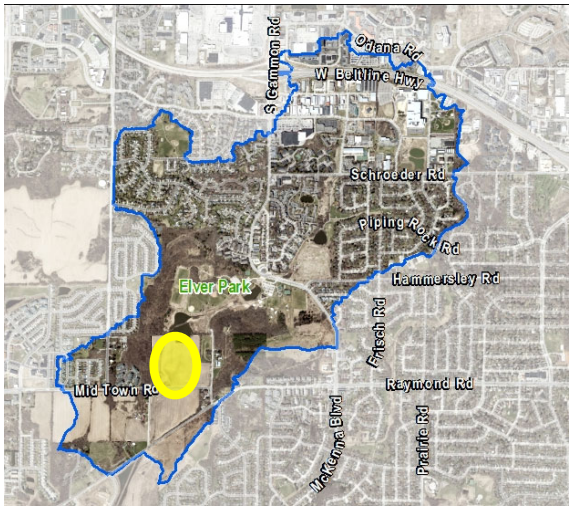
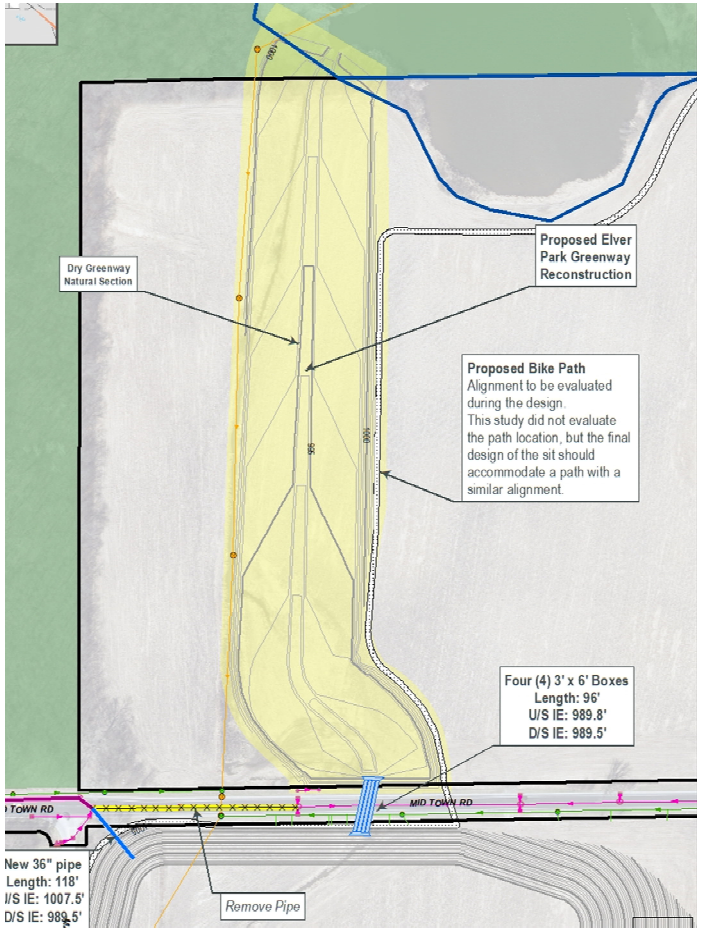
Elver Park Greenway Reconstruction



- **Goal: Provide Conveyance for 1% event**
- Excavate new greenway channel
- Increase culvert size under Mid Town Rd.
- Eliminates overtopping of Mid Town Rd.
- MMSD sanitary sewer interceptor to avoid
- Est. cost - $2.08 million
- Land acquisition needed



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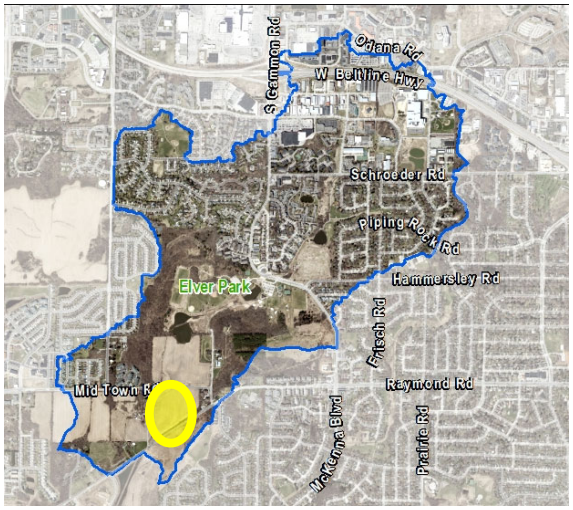
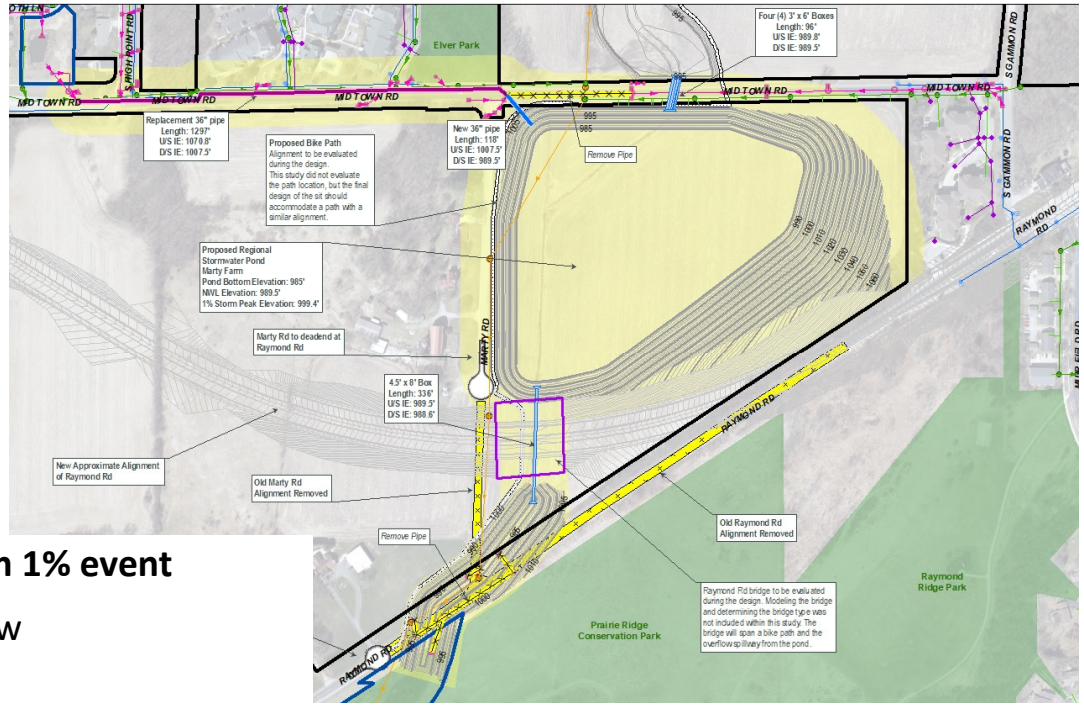
Marty Road/Mid Town Road Regional Pond





- **Goal: Provide Storage and Control of Runoff from 1% event**
- Add regional stormwater storage to attenuate flow
- Reflects assumed realignment of Raymond Road
- Bike path under new Raymond Rd.
- Substantial reduction in 100-yr peak watershed outflow
- Est. cost - $11.26 million
- Land acquisition needed

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Public Outreach for Greentree/McKenna Report

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

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