



Stormwater Utility Vegetation Management Plan

Update to the Board of Public Works

City of Madison Engineering Division
October 30, 2024



BPW Updates

- BPW on August 23, 2023 – Draft Framework
- BPW on March 6, 2024 – Public Engagement and RESJ Summary
- BPW June 26, 2024 – Technical Expert Engagement - Volunteer
- BPW October 30, 2024 – Technical Expert Engagement – RFQ
- NEXT BPW Presentation – DRAFT PLAN

What IS included in this plan.

- Community identified values and priorities.
- Big picture goals and strategies related to vegetation management on ponds and greenways.
- Identification of priorities for fiscally and environmentally sustainable vegetation management.
- Input from ecologists, stormwater engineers, and other experts in the field of climate change, land management, and ecological restoration.



What IS NOT included in this plan.

- Specific improvements to individual ponds or greenways.
- Recommendations for implementing green infrastructure, or larger sustainability initiatives outside of management of vegetation in stormwater utility owned lands.
- Overall vegetation within the city and road right of way.
- Vegetation on park land.
- Citywide Urban Forestry goals.
- Will not dictate a specific design but will be a companion document guiding the process for long term vegetation management and goals.
- This plan will not determine new land to acquire or new reconstruction projects.

Outside Expertise

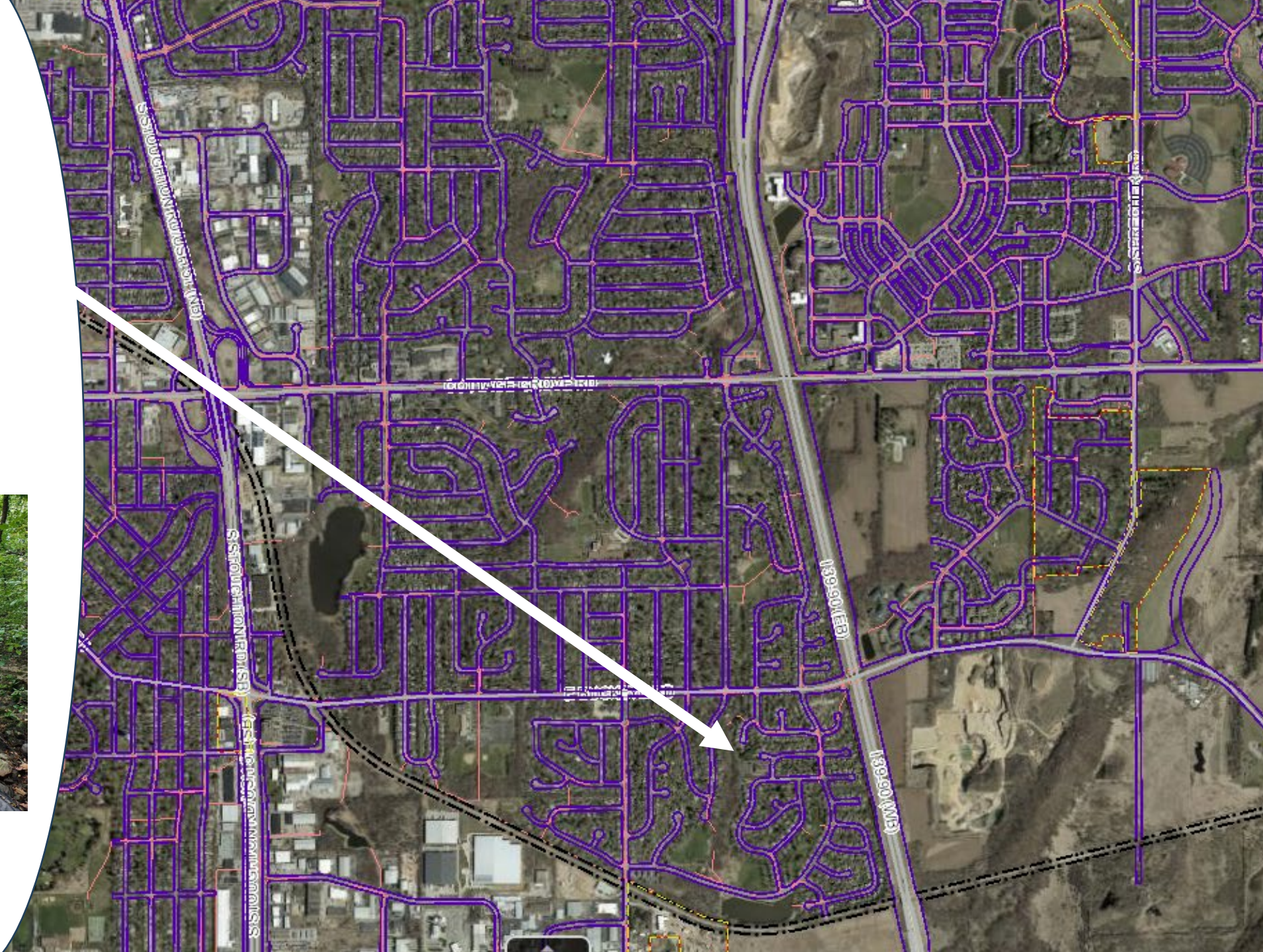
- Technical questionnaire – June BPW
- Focus Group Workshop – June BPW
- Consultant - Today

Consultant Request for Quotes

- Review top public concerns identified through the public engagement process and identify how these concerns may be addressed as part of the Stormwater Utility (SWU) citywide vegetation management plan.
- Develop a prioritized list of recommendations for the specific site to address vegetation management that reflects public concerns
- Provided three sample sites to chose from on how to implement strategies. Three sample sites reflect typical sites within stormwater utility.



Inter-fluve River Restoration and Water Resources North Pennito Creek Greenway



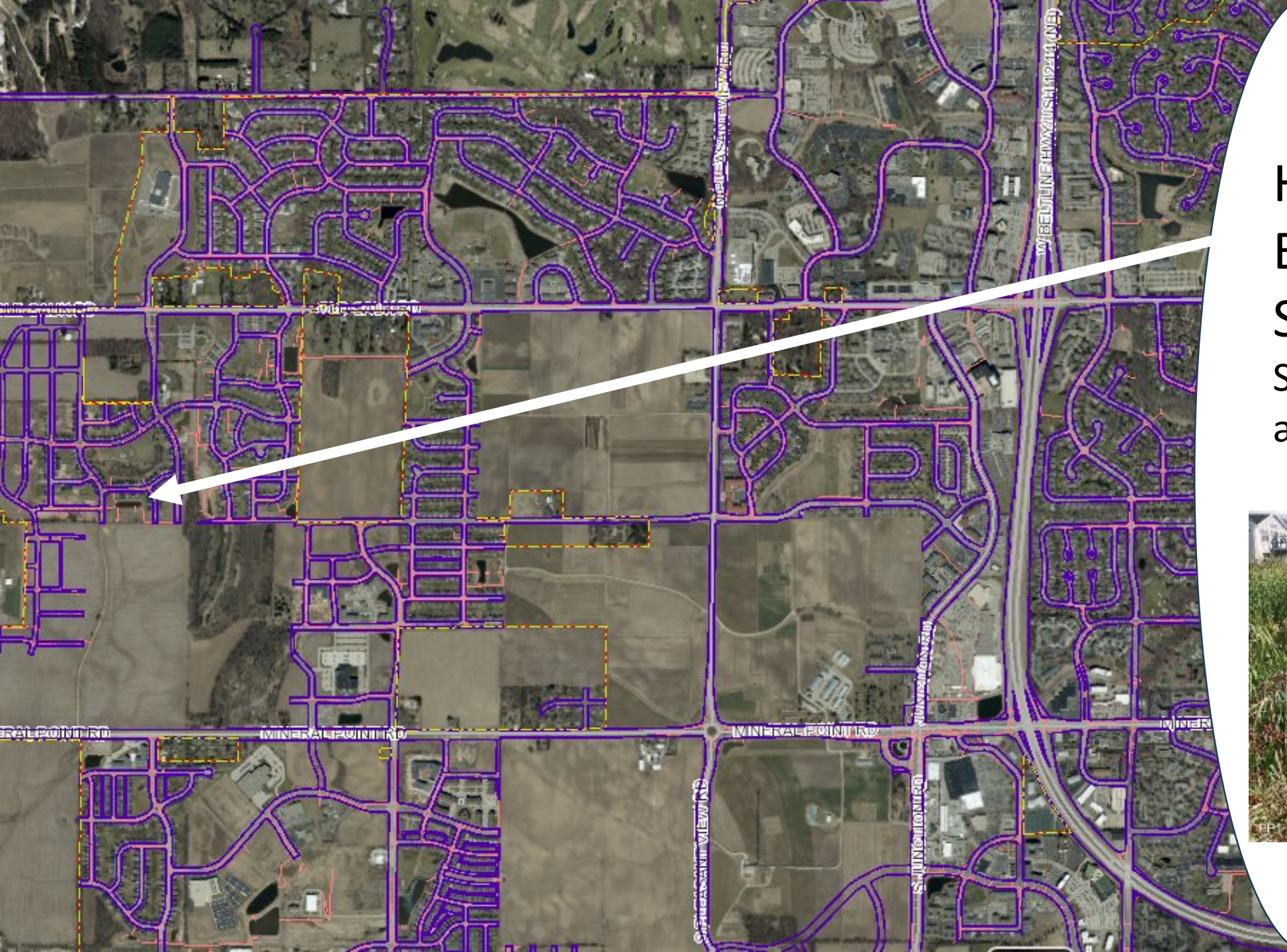
Inter-fluve River Restoration and Water Resources

- Public Concerns Addressed in Recommendations
 - Flooding
 - Erosion
 - Improving habitat for wildlife
 - Climate Change Impacts
 - Biodiversity
 - Preserving Tree Canopy



Inter-fluve River Restoration and Water Resources

- Suggested maintaining stable forested vegetation, areas that are not forested could be subject to erosion
- There is no ideal forest type or canopy coverage, as there is a spectrum that varies with management, rates of decay, and tree age. Older forests tend to have more abundant woody debris, but less understory shrub and sapling growth. Younger forests tend to have less debris but a higher stem density of shrubs and saplings.
- Removing aggressive invasive shrubs like Japanese knotweed, bush honeysuckle and buckthorn
- Treat understory aggressive forbs like reed canary grass, phragmites, and garlic mustard
- Manage for novel ecosystems
- Monitoring and maintenance strategies should focus on controlling invasive shrubs, forbs and grasses
- Because each greenway has different topography, soils, slope, runoff and vegetation characteristics, management of each greenway in Madison needs to happen individually.
- Any channel restoration planned should incorporate the use of native trees, shrubs and grasses. Wood debris on the forest floor should be left in place



Heartland
Ecological
Services
Sister Oak Infiltration
and Wet Ponds



Heartland Ecological Services

- Public Concerns Addressed in Recommendations
 - Impacts to biodiversity and habitat for pollinators, birds and other wildlife. Concern over large-scale tree removal.
 - Public values native and biodiverse landscapes for aesthetes, resiliency to flooding and erosion, and for benefits for other ecosystem services such as pollinator habitat.
 - Native Species Enhancements to increase plant diversity, stabilize shoreline, contribute to aesthetics and may reduce algal blooms
 - Prescribed burning
 - The public is interested in volunteering at these properties.
 - City provide outreach events, (e.g. walking tours), assist citizens with monitoring and reporting, trash cleanup, mechanical removal of plants, assist with seeding and plantings

Heartland Ecological Services

- Improve habitat with basking logs and structures on ponds edge
- Improve biodiversity by:
 - Remove cattails with mechanical control, prescribed burning and herbicide application
 - Remove woody vegetation: Woody encroachment will shade out desired herbaceous vegetation, reduce native species diversity, and may destabilize the constructed basins. Trees and brush with extensive woody root systems can destabilize dams, embankments, and side slopes by creating seepage routes (EPA 2029) and can cause blockages within conveyance structures. Cut woody vegetation and treat stems with herbicide.
 - Spot herbicide and mechanically control through digging other invasive herbaceous species.
 - Install wetland emergent plugs
 - Implement prescribed burns
- Increase opportunities for volunteers and education

Quercus Land Stewardship Services

All Sites
Center for Industry
Ponds and Wetland
Complex



Quercus Land Stewardship Services

- Public Concerns Addressed in Recommendations
 - Wildlife habitat and impacts
 - Loss of biodiversity and species extinction
 - Invasive plants
 - Herbicide on stormwater land
 - Vegetation and heat islands
 - Flooding, Water Quality and Types of Vegetation
 - Sequestering carbon in soils and vegetation

Quercus Land Stewardship Services

- To improve wildlife habitat, reduce invasive species, improve biodiversity, reduce species extinction, reduce herbicide application implement:
 - The following can address all three:
 - Prescribed Fires
 - Control of invasive and excessively abundant woody plant species
 - Interseed with native plants

Similarities and Differences

- Consensus on:
 - Removing invasive species
 - Increase species diversity
 - Monitoring invasive species
 - Similar strategies for woody control, herbaceous goals, and management of native ecosystems between Heartland Ecological Services and Quercus Land Stewardship
- Differences
 - Adapting to novel ecosystems
 - Goals and role of woody vegetation (trees and shrubs)

Next Steps

- Draft plan review by Advisory Working Group
- Draft Plan uploaded to website and presented to BPW (informational)
- Posted 30 days for public comments
- Address comments make any necessary revisions
- Final plan adoption at BPW

