



# Stormwater Utility Vegetation Management Plan

## Update to the Board of Public Works

City of Madison Engineering Division  
June 26, 2024

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# BPW Updates

- BPW on August 23, 2023 – Draft Framework
- BPW on March 6, 2024 – Public Engagement and RESJ Summary
- BPW today on June 26, 2024 – What we heard from outside experts and next steps



# 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
- Focus Group Workshops
- Consultant review of the data, science, and trends related to top concerns



# Technical Questionnaire

- Solicit volunteer expertise from ~ 160 people with professional or academic backgrounds in stormwater engineering, wildlife biology, ecology, land management, urban heat islands, lake and water quality, pollinators, carbon, climate and agronomy.
- Developed list from UW Sustainability Staff Search, Dane County and DNR professionals in these fields, recommendations from Advisory Working Group, and people who self identified as experts in the local community.
- Identify points of shared agreement and consensus, identify conflicting points and conservation trade-offs and incorporate this into strategies based on existing resources.



# Technical Questionnaire

- Reached out to ~160 technical experts.
- ~ 110 responded that they would be interested in assisting
- Full questions and responses available here:
- [https://www.cityofmadison.com/engineering/documents/projects/Technical%20Response%20Summary%20-%20April 0.pdf](https://www.cityofmadison.com/engineering/documents/projects/Technical%20Response%20Summary%20-%20April%200.pdf)



# Technical Questionnaire

- Overall Findings
  - **Priorities and Solutions Differ Amongst Technical Experts**
  - **Multiple Ecosystem Resiliency is Complex with often Competing Solutions**
  - **Native Plants with Deep Root Systems Provide Stormwater Benefits**
  - **Areas of General Consensus**
  - **Areas of General Conflict**

Important: The quotes in the following slides are not inclusive of all of the responses. They are chosen to help illustrate the diversity and depth of responses received. For the full responses, please review the project website:

<https://www.cityofmadison.com/engineering/projects/city-engineering-stormwater-utility-vegetation-management-plan>

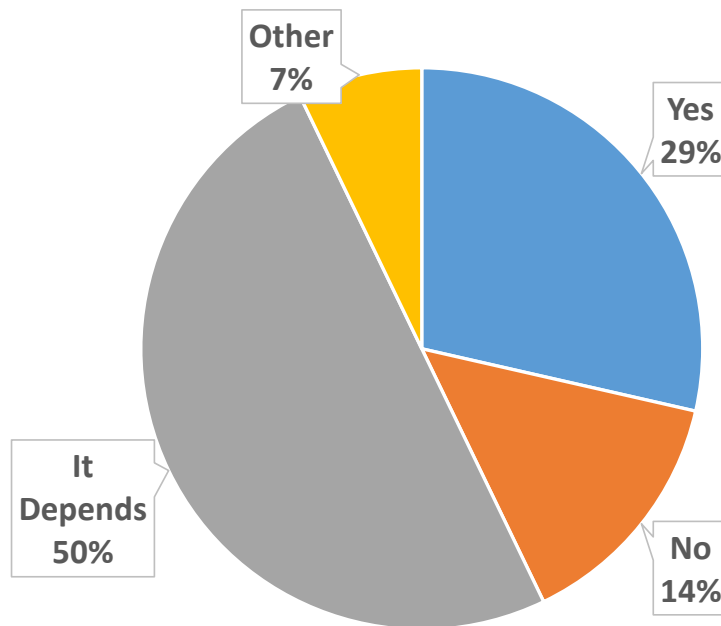
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# Differing Views on Removing Natives that are not part of the Original Ecosystem

What about including removing native species that may not have been part of the original forest or ecosystem community? For example, removing box elders, slippery elm, silver maple, cottonwoods, etc. in areas that also have older populations of bur, white, and red oaks?



*“Mesophication or the encroachment of native woody species that prefer shadier more moist environments or cannot tolerate repeated fire events within multiple years (i.e. maples, slippery elm, poplars, birch, and cherry) is one of the greatest threats to community health and diversity within wooded communities. It shades out the groundlayer and overtime starves the vegetation of the amount of sunlight it requires to grow.”*

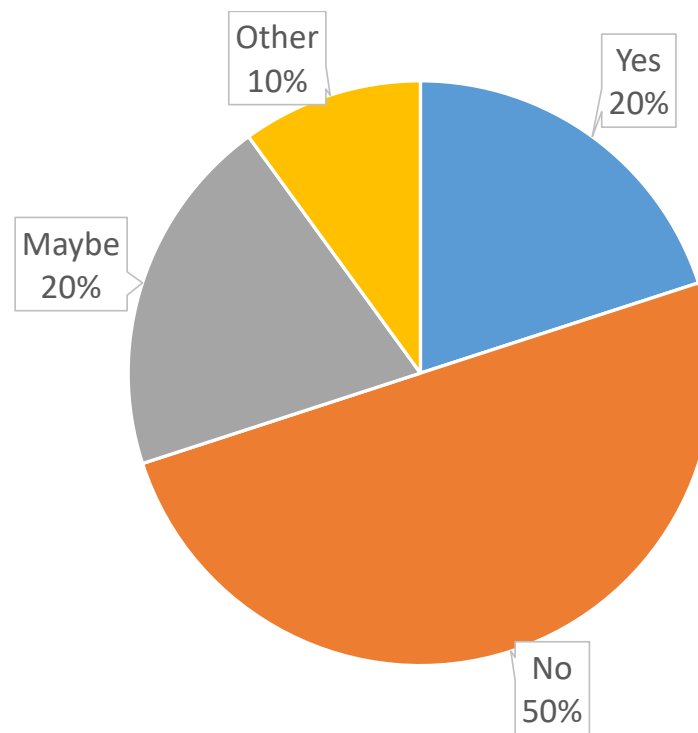
*“I am not in favor of blanket removal of native trees simply because they were not part of an original forest. If removal is part of a larger forest management plan that includes planting of oaks and a plan to manage the oak forest/woodland over time, that’s fine.”*

# Timing and Method of Mowing in Herbaceous Communities is Site Specific

- *“Mowing as a practice in prairie management is contextually both useful and potentially troublesome. In new (1 to 3 year old) prairies infrequent mowing can leave thatch behind that could potentially smother the developing basal rosettes of native species depending on the vegetation being mowed. If the vegetation being mowed is mostly sparse annual vegetation, or native aggressive plants which form a shading canopy (i.e. dogwood, canada goldenrod) mowing should not have a detrimental impact and should help the young prairie establish by preventing the buildup of those undesirable plants in the seedbank. In situations where grass is the primary vegetation being mowed, infrequent mowing leaves behind a layer of thatch which can be thick enough to smother a new prairie or reduce the biodiversity of an established prairie.”*
- *“Spot mowing is not an issue. Broadcast mowing can be an issue if a large thatch layer is developed, potentially smothering native plants and creating cooler soil temperatures that will promote non-native cool season grass establishment.”*

# Wary of Assisted Migration

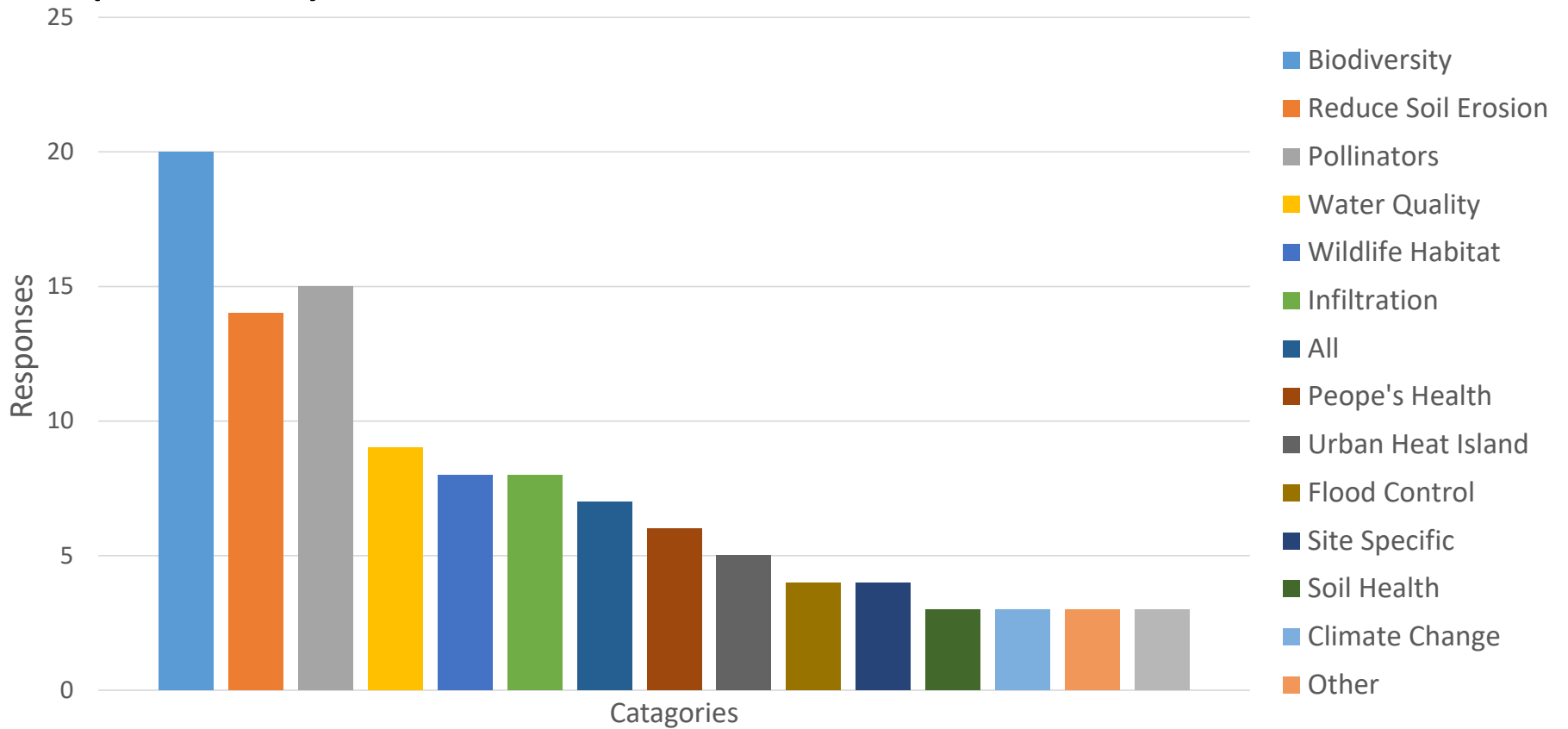
Should public lands encourage ecosystem shifts related to climate change? What are your thoughts on assisted migration, particularly with regards to plant selection for restoration of urban, public lands?



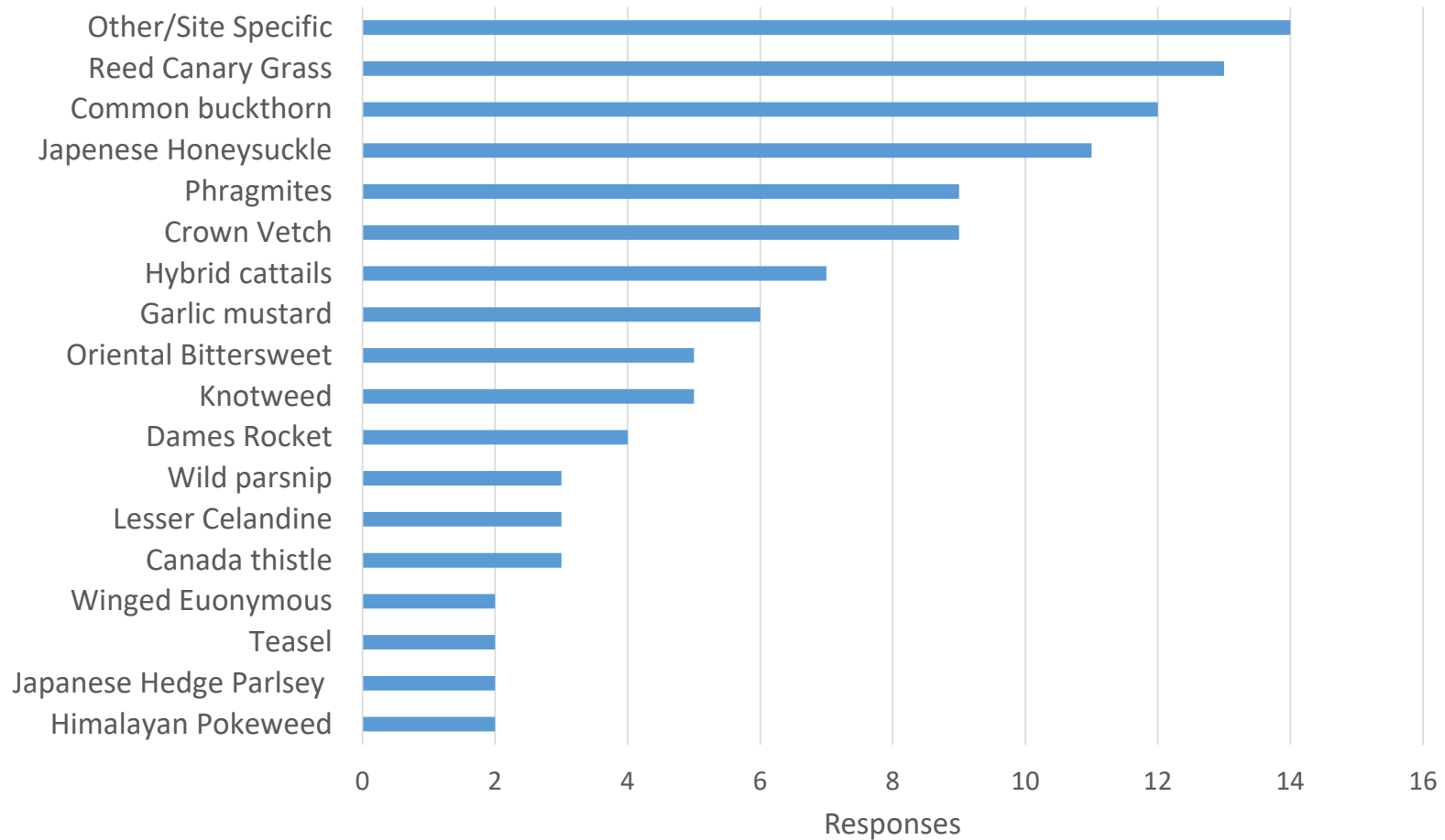
*“At this time, I would caution against introducing native vegetation species found south of the Wisconsin border into local Madison ecosystems, unless we understand or know that each individual species introduced will not have a negative affect on local vegetation and wildlife.”*

*“I think assisted migration is an important tool in land management and is not at all problematic in Urban areas.”*

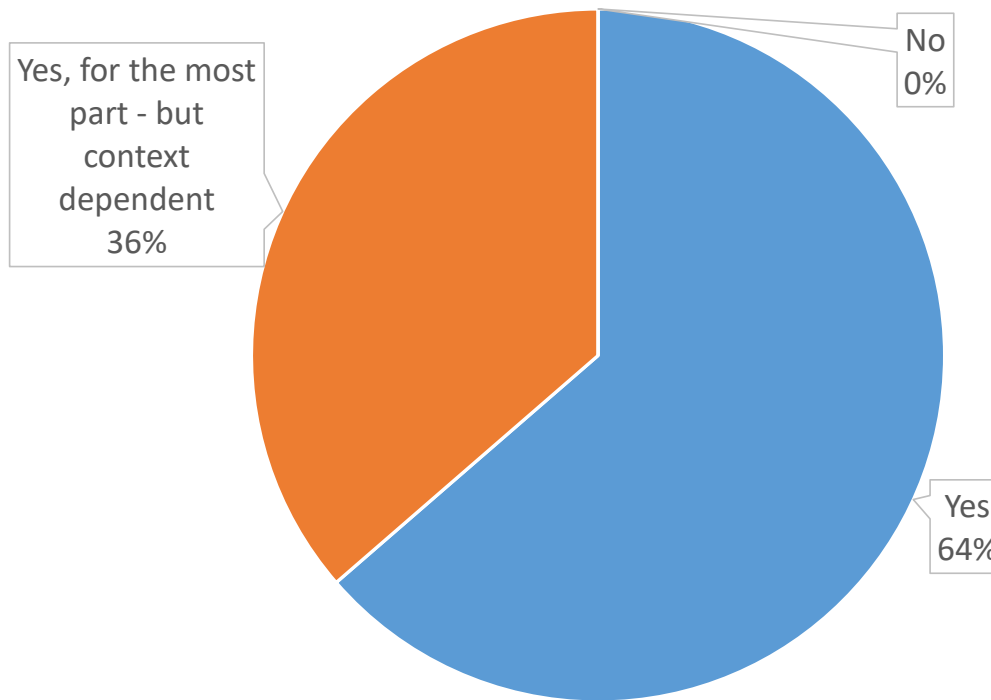
# Top Ecosystem Services



# Invasive Species that Pose the Greatest Threat



# Invasive Species Management is Important



Should invasive species removal be included on public land management goals?

# Technical Questionnaire

<https://www.cityofmadison.com/engineering/projects/city-engineering-stormwater-utility-vegetation-management-plan>

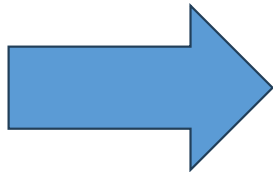
## Volunteer Technical Experts

As part of plan development, the city solicited assistance from experts in the field of land management, stormwater engineering, climate change, conservation, native species, pollinators, water resources and other applicable topics.

We asked technical experts to:

- Answer questions related to plan development and stormwater vegetation. A summary of their responses, including an attachment with each individual response can be found below.

- [Volunteer Expert Technical Response Summary PDF](#)



# Focus Group Workshop

- May 29 from 2:00 pm to 4:30 pm
- 29 experts volunteered to participate in focus group workshop
- Staff presented overview type/acres of land and existing resources
- Asked to provide draft vegetation management strategy on specific sites
- Asked to provide recommendations on system wide priorities
- Full exercises and responses available here:

[https://www.cityofmadison.com/engineering/documents/projects/Focus%20Group%20Workshop%20Summary\\_0.pdf](https://www.cityofmadison.com/engineering/documents/projects/Focus%20Group%20Workshop%20Summary_0.pdf)

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# Vegetation Management Exercise

Group 1  
GR 6435-002

Group 2  
GR 7052-005

Group 3  
PD 1452-003

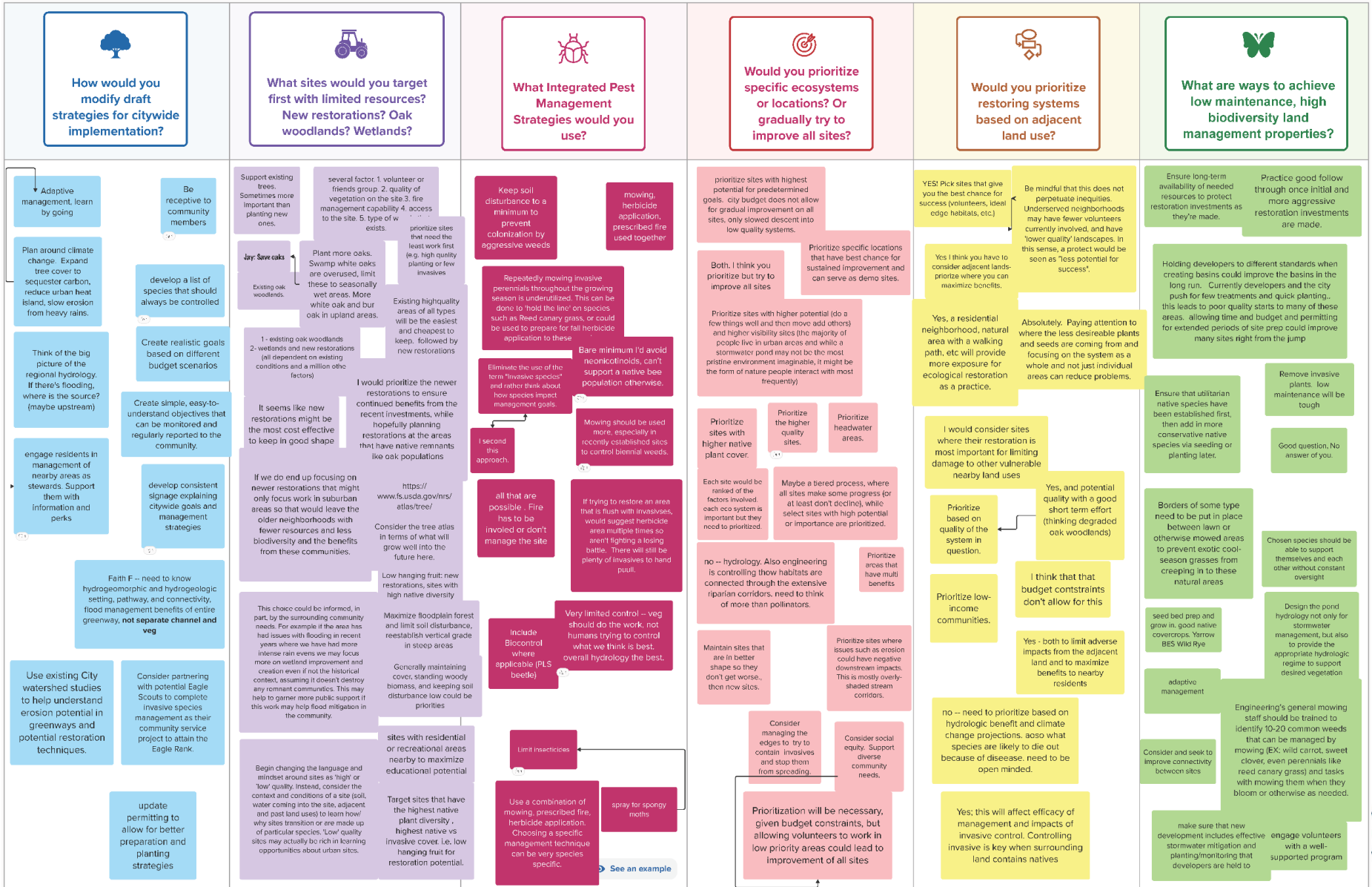
Group 4  
GR 7052-005



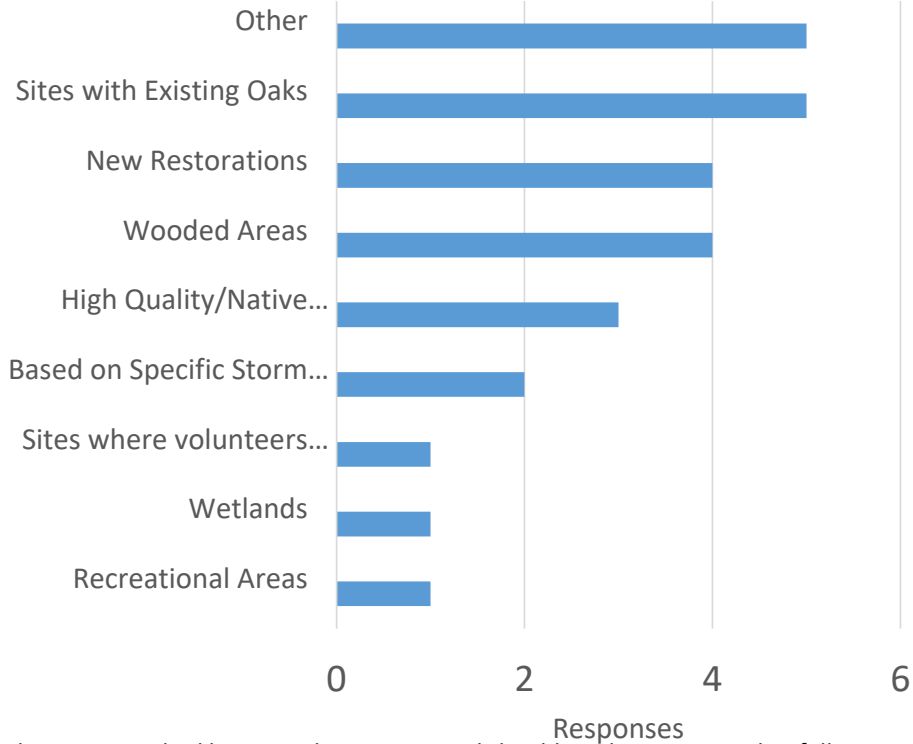
# Systemwide Priorities

- How would you implement draft strategies for citywide implementation?
- What sites would you target first with limited resources? New restorations? Oak woodlands? Wetlands?
- What Integrated Pest Management Strategies would you use?
- Would you prioritize specific ecosystems or locations? Or generally try to improve all areas?
- Would you prioritize based on specific land uses?
- What are ways to achieve low maintenance, high biodiversity land management properties?

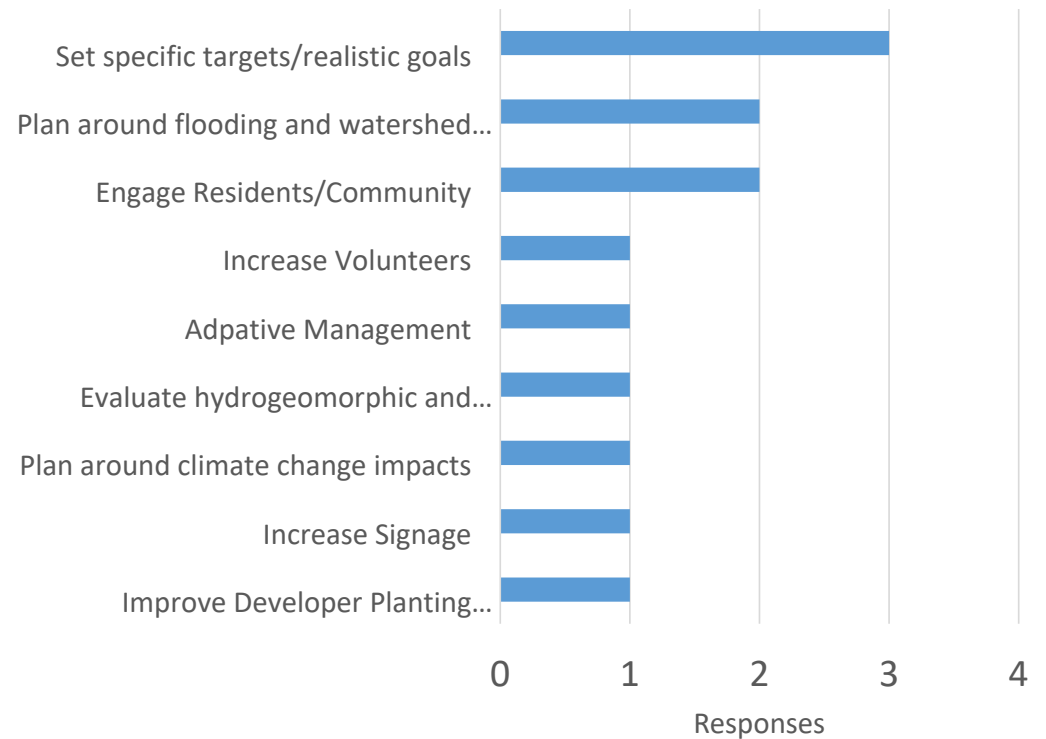




How would you modify draft strategies for citywide implementation?

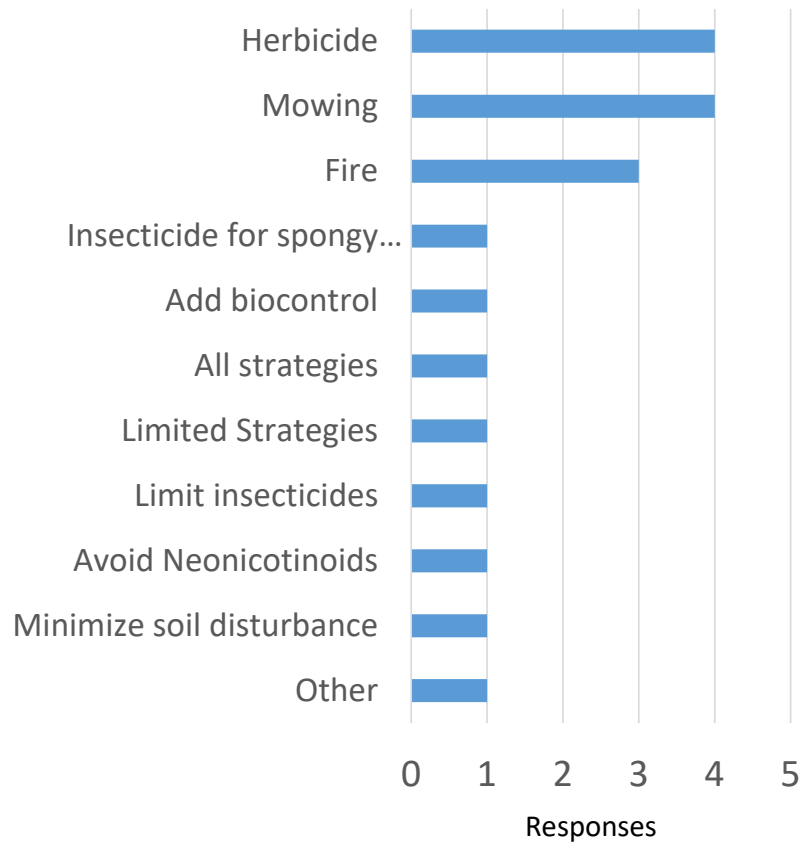


What sites would you target first with limited resources. New restorations? Oak woodlands Wetlands?

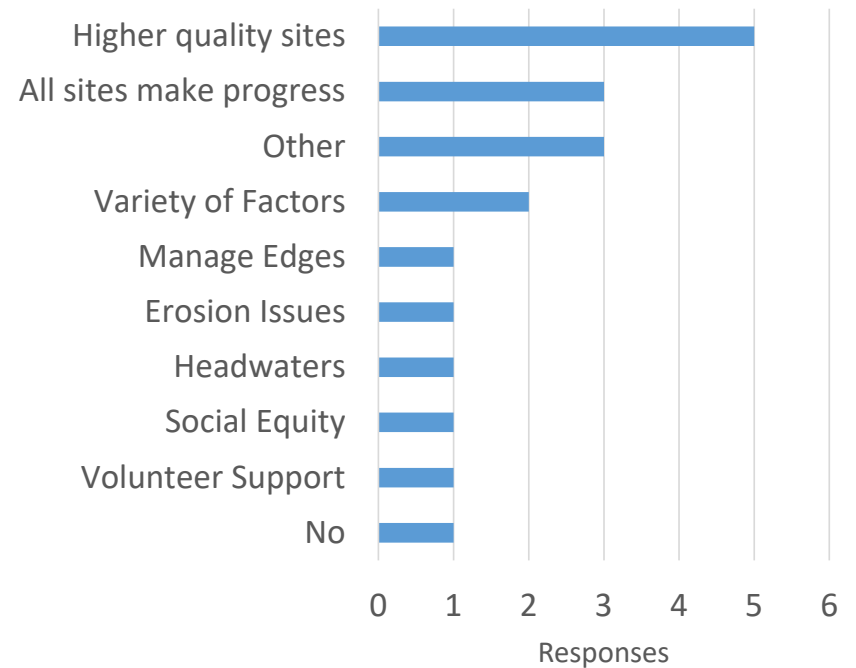


These are graphed by general categories and should not be interpreted as full recommendations from experts. Exact quotes are available on the project webpage.

What Integrated Pest Management strategies would you use?

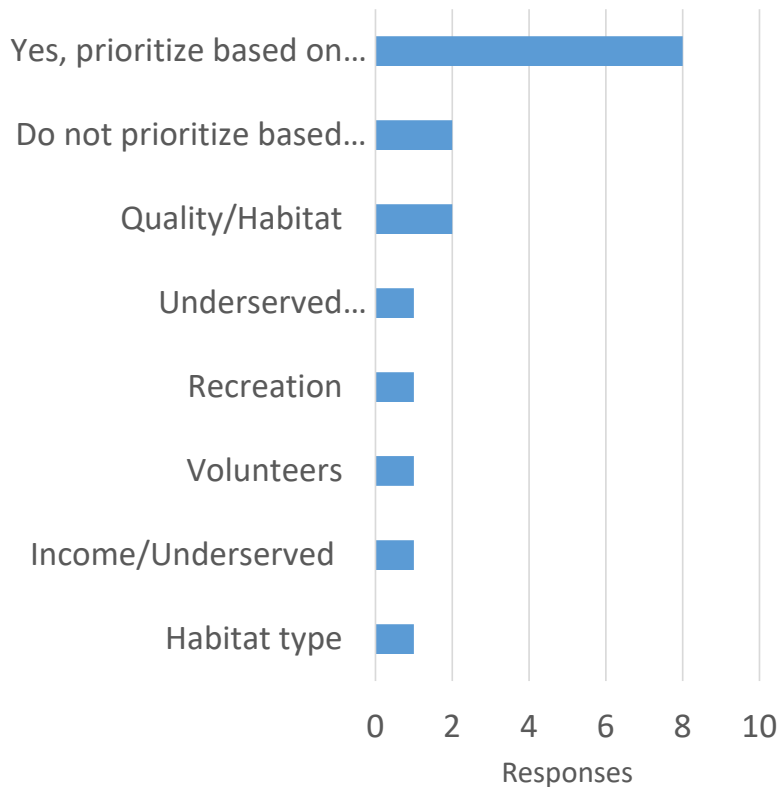


Would you prioritize specific ecosystems or locations or gradually try to improve all sites?

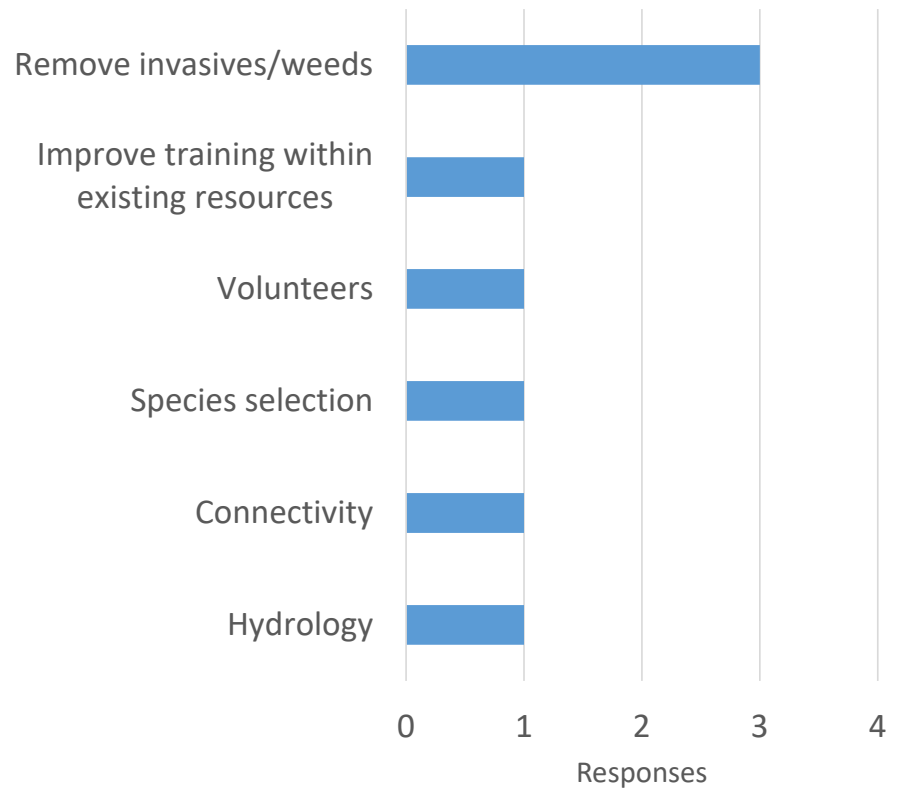


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Would you prioritize restoring systems based on adjacent land use?



What are ways to achieve low maintenance, high biodiversity land management properties?



These are graphed by general categories and should not be interpreted as full recommendations from experts. Exact quotes are available on the project webpage.

# Next Steps

- Consultant review of the data, science, and trends related to top concerns based on feedback
- Specifically look areas where there was not consensus – vegetation maintenance along channels that experience urban hydrological conditions to minimize erosion

