



# Watershed Alliance for the Greater Zumbro



**2022-2031 Comprehensive Watershed  
Management Plan Summary**

*Published November 2021*





## FOCUS ON LOCAL INPUT

WAGZ carried out extensive stakeholder engagement activities during Plan development to ensure that the Plan is a local plan emphasizing the interests of local water managers, policy makers, and residents who live, work, and recreate within the planning area. Engagement activities included:

- **Kickoff!**—In 2018, the Zumbro River watershed was awarded a planning grant by the Minnesota Board of Water and Soil Resources, with the goal of aligning local water planning with state strategies. To kickoff the planning effort the public was invited to come together and provide input and learn about the watershed.
- **Waterside Chats**—In 2019, the public was invited to gather for conversations located throughout the watershed planning area to provide input and communicate concerns, providing the planning process with valuable input leading to prioritizing issues to be outlined in the plan.
- **Resident Surveys**—Surveys were sent out to a randomized list of residents throughout the watershed in order to gauge priorities and concerns. Over 250 responses were received.
- **Story Map**—In 2021, WAGZ hosted an online collection of maps and images to visually summarize Plan development, present the primary watershed issues and resource concerns, and seek feedback on the actions the Partnership seeks to implement.



Residents and visitors enjoy a canoe trip along the Zumbro River and its many tributaries.



Streambank erosion on Mazeppa Creek near the confluence with the North Fork of the Zumbro River



Lake Pepin at the outlet of Wells Creek



Streambank restoration projects reduce nutrient and sediment loading from the landscape and improve habitat.



The planning area is home to a broad diversity of birds, fish, and other animals.



Water flows over the spillway of Lake Zumbro Dam.

## PRIORITY ISSUES AND RESOURCES—WHAT'S THE PROBLEM?

Decades of studies have given us a clear picture of the problems facing the water and natural resources within the planning area. During Plan development, WAGZ considered stakeholder input, existing studies, geospatial data, advisory group input, and local experience to articulate 9 key issues to be addressed by the Plan. Although categorized by importance, many of these issues are interrelated and actions taken to address one issue will benefit others.

### LEVEL 1 ISSUES

- **Groundwater/Drinking Water Contamination**—Groundwater quality and drinking water safety is threatened by contamination, including high levels of nitrate. Karst terrain (explained below) across much of the area makes our groundwater susceptible to pollution.
- **Degraded Surface Water Quality**—Surface water quality is impaired or threatened by pollutants like excess nutrients and bacteria as well as changes to the natural drainage patterns. Changing the flow allows water to rush into streams faster, carrying more pollutants and increasing erosion.
- **Accelerated Erosion & Sedimentation**—Excessive erosion and sedimentation reduces agricultural productivity, damages streambanks and stream habitats, and pollutes surface water with excess sediment.
- **Excessive Flooding**—Excessive flooding threatens public safety, property, and plant and animal communities that depend on shoreline and floodplain areas for their habitat.



### LEVEL 2 ISSUES

- **Degraded Soil Health**—Poor soil health reduces agricultural productivity and limits the beneficial ecological functions of soil.
- **Landscape Resiliency & Altered Hydrology**—Changing the landscape and water movement disrupts the natural water cycle. It further limits the ability of the landscape to recover from negative impacts stemming from a changing climate and increased precipitation.
- **Threats to fish, wildlife & habitat**—Natural areas, forests, prairies, and wetlands providing habitat and other ecological benefits, and the species that inhabit them, are threatened by human activity.



### LEVEL 3 ISSUES

- **Threatened Groundwater Supply**—Groundwater sustainability is at risk. As population growth continues in the watershed, groundwater withdrawals are increasing. The watershed has lost important recharge areas like wetlands that filter out pollutants before the water enters our aquifers.
- **Reduced Livability & Recreation**—Outdoor recreation and overall quality of life are affected by polluted water and lack of access to our natural resources through public access points, trails, and parks.



## CONNECTING GROUNDWATER AND SURFACE WATER ISSUES

The Greater Zumbro watershed is characterized by an unusual type of geography called **karst**. It features rolling hills, hollows, caves, sinkholes, and dramatic bluffs and valleys.

These features, formed primarily of limestone, make the landscape “porous,” which makes the planning area’s water resources more challenging to protect. Contaminants carried in runoff can quickly find routes from the surface into groundwater where they are more difficult to remove. Excessive nutrients from fertilizer, pesticides, manure, and other chemicals quickly move into groundwater. Chemicals used on the landscape can reappear at unexpected times and in unexpected locations, including area trout streams that are fed by groundwater sources.



## MEASURABLE GOALS—WHAT CAN WE ACHIEVE?

WAGZ established measurable goals to address each of the 9 key issues prioritized during Plan development with emphasis given to goals that address level 1 issues. The Plan includes long-term goals that describe desired future conditions in the watershed, as well as 10-year goals that measure the progress expected within the 10-year planning period.

Some goals are applicable watershed-wide while some focus on specific spatial areas, natural resources, or target audiences (including watershed-specific pollutant reduction goals for nitrogen, phosphorus, and sediment). Goals include fixing existing problems that have developed over time and preventing future water and natural resource problems from occurring.

### GOAL EXAMPLES AND RELATED ISSUES



Provide all private well owners in groundwater priority areas access to well testing programs  
(Groundwater/Drinking Water Quality)



Implement projects and practices to reduce total nitrogen loading by up to 40,000 lbs/year in the South Fork Zumbro River (Surface Water Quality)



Stabilize degraded and eroded streambank areas through 10 projects covering 5,000 feet of channel  
(Erosion and Sedimentation)



Manage and restore floodplains to reduce flood risk to structures and critical infrastructure  
(Flooding)



Increase the use of cover crops, perennial vegetation, and conservation tillage strategies by 3,000 acres  
(Soil Health)

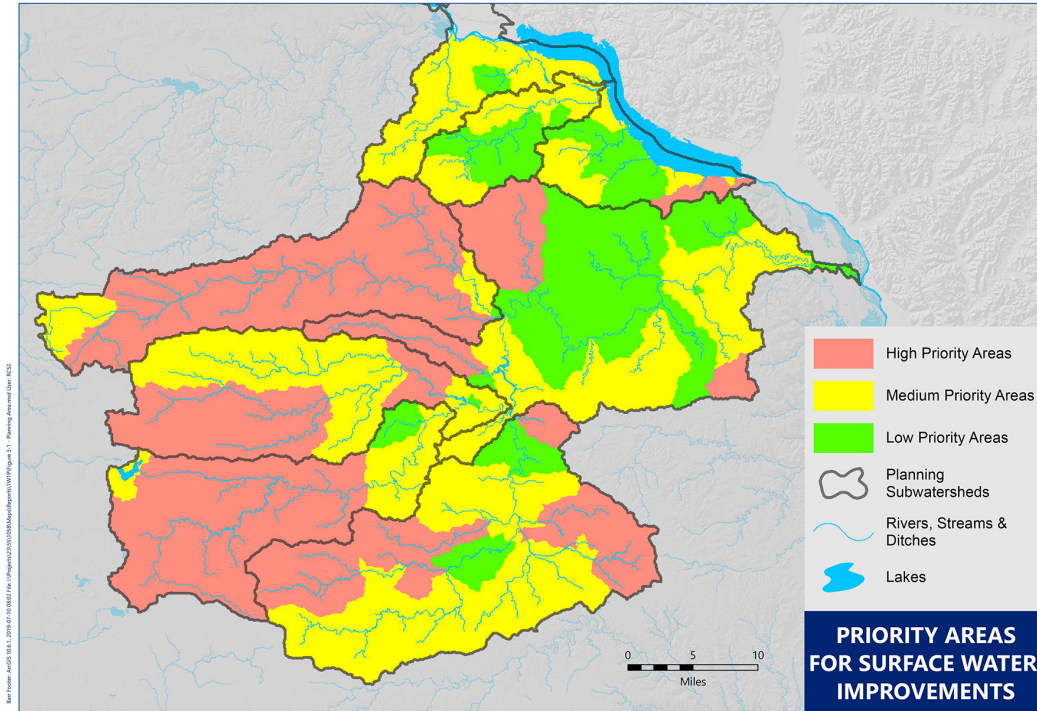


Protect and increase forest cover through climate appropriate plantings on 1,000 acres  
(Landscape Resiliency and Altered Hydrology)

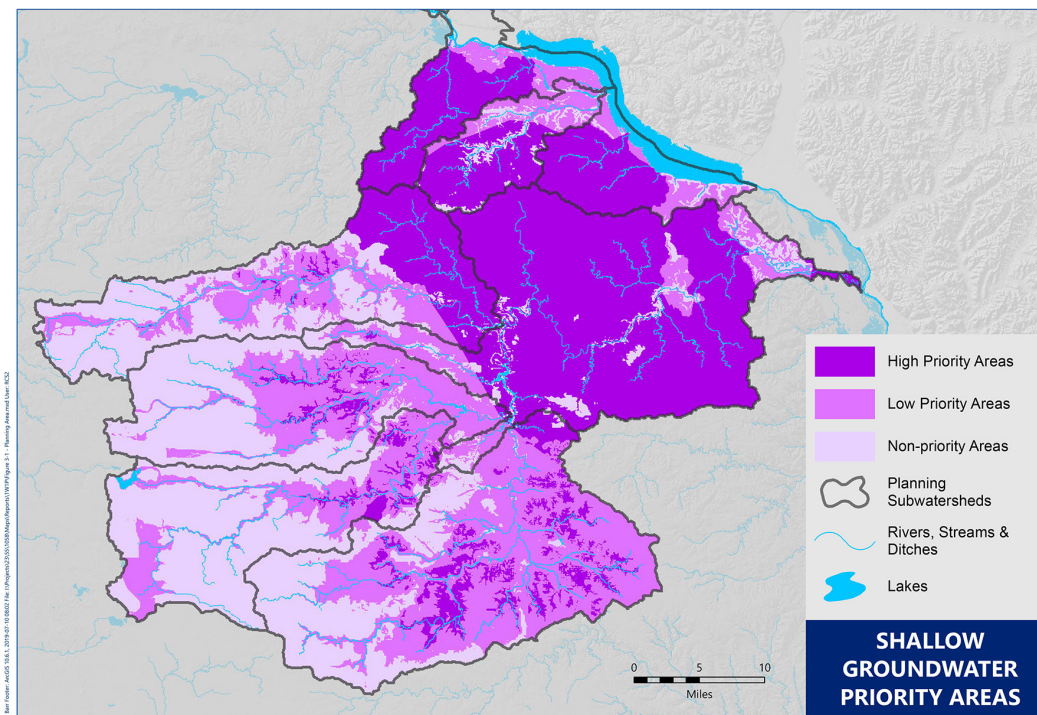


## PRIORITIZING AREAS FOR PROTECTION AND RESTORATION

With the high diversity of land use and geological landscapes within such a large watershed, prioritizing areas for protection and restoration action is an important piece of the puzzle. We used models, monitoring data, and input received during planning to prioritize subwatersheds where we can achieve the greatest impact for our efforts to protect and improve surface water and groundwater quality.



Smaller watersheds within the planning area were classified as high, medium, or low priority with respect to surface water quality issues based on a combination of nutrient and sediment loading from the landscape, water quality impairments, and areas identified for protection by the Minnesota Pollution Control Agency and Minnesota Department of Natural Resources. These classifications help the Partners prioritize the implementation of projects to reduce pollutant loading and improve the water quality of lakes and streams.



The Partners established priority areas for groundwater based on geologic sensitivity to contamination, landscape and geologic characteristics that protect groundwater recharge areas, connectivity to trout streams, and areas with known contamination of groundwater nitrogen above the federal limit (10 parts per million). The Partners use these classifications to target and prioritize activities with direct and indirect benefits for groundwater quality.



## IMPROVEMENT THROUGH TARGETED ACTIONS

WAGZ developed a plan for action that includes projects, studies, monitoring, and education and outreach. Within each subwatershed, we analyzed the landscape to identify likely project locations for field practices to reduce pollutant loading, minimize erosion, and slow or retain runoff.

Example implementation activities organized by (Level 1) key issue:



### Groundwater/Drinking Water Contamination

- We will implement practices on the landscape to limit nitrogen movement to groundwater such as planting cover crops and restoring wetlands. Hosting field days and site visits to promote these practices is a priority initiative.
- We will provide financial assistance to seal abandoned/unused private wells and repair/replace failing septic systems.
- We will utilize our existing monitoring data, and expand on data gaps, to analyze trends and communicate issues to private well users and the public.



### Degraded Surface Water Quality

- We will implement practices to reduce erosion and filter pollutants in rural priority areas by providing technical and financial assistance to landowners to reduce runoff of pollutants like nitrogen that enter our waterbodies.
- We will implement projects that filter out sediment and other nutrients like nitrates and phosphorus from stormwater runoff before they reach our waterbodies.



### Accelerated Erosion & Sedimentation

- We will implement projects that will stabilize streambank areas.
- We will provide support for landowners to maintain buffers and expand cost share assistance programs focused on soil health like planting cover crops and no-till practices.



### Excessive Flooding

- We will reconnect and restore floodplains to slow the flow and increase the ability for water bodies to withstand the impacts of flooding
- We will use existing modeling to identify the most important locations for storing water on the land and implement projects in priority headwater areas to store water and slow the flow.

### SOIL HEALTH PRACTICES



Practices such as rotational grazing, cover cropping, perennial cropping and no-till systems maintain and improve soil health. These practices promote habitat for wildlife, reduce erosion, and improve water quality while retaining nutrients, moisture and organic matter in our soil. The Plan includes technical and financial support to increase the adoption and continued use of soil health practices—like hosting field days to demonstrate practices for local producers.



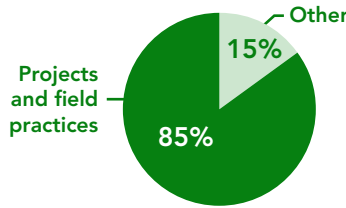
### STREAMBANK RESTORATION

Streambank restoration projects like the one performed along Cascade Creek in Rochester mimic natural conditions, reduce sediment and nutrients, improve fish habitat, and reconnect adjacent floodplain to reduce flood risk and increase landscape resiliency. The Plan seeks to use grant funding for additional stream restoration projects performed in cooperation with the Minnesota Department of Natural Resources and other partners.

## HOW WE CARRY-OUT THE PLAN

While about 85% of WAGZ resources are directed towards projects and field practices, the Plan includes other activities that support the Plan goals, including:

- Monitoring and studies
- Education and public involvement
- Regulatory oversight
- Administration of the partnership



The Plan carries an estimated price-tag of approximately \$17 million over 10 years. This cost is split between local government partners and State and Federal grant funding, including dedicated grant funding via Minnesota's Clean Water Land and Legacy legislation.

The WAGZ Comprehensive Watershed Management Plan does not create a new unit of government. Instead, the WAGZ partner organizations pledge to cooperatively carry out the implementation Plan—which has been designed to leverage the existing programs, capacities, and expertise of the Partners while providing a framework for expanded and collaborative roles.

## OPPORTUNITIES TO GET INVOLVED

Contact your local partner organization to get more information about ways you can protect and restore the water and natural resources in your community, including cost-share grant opportunities.



More information about the WAGZ Comprehensive Watershed Management Plan is available at:

<https://www.olmstedcounty.gov/residents/soil-water-resources/water-resources>

Additional information about water and natural resource planning is available from the following Minnesota state agencies:

<https://bwsr.state.mn.us/>

<https://www.dnr.state.mn.us/ewr/index.html>

<https://www.pca.state.mn.us/water>

<https://www.health.state.mn.us/communities/environment/water/>

<https://www.mda.state.mn.us/>



### COST SHARE DETAILS

The WAGZ partners plan to use much of the funding available for implementation to support field practices constructed in cooperation with local landowners through a cost-share program similar to the traditional SWCD service model.

Project cost-share funding amounts will be based on estimated project benefits, location within priority watersheds, and other factors. Eligible practices include traditional conservation practices, both structural and non-structural, that retain and control runoff to improve water quality, reduce erosion, and protect groundwater. Structural practices that may be eligible include sediment control structures or controlled drainage practices. Nonstructural practices that may be eligible include implementing cover crops or nutrient management practices.

The Partners anticipate that many of the projects will provide multiple benefits in addition to improving surface water quality. The specific practices implemented at project locations identified in the Plan will depend on local landscape considerations, landowner willingness, and potential for multiple benefits.