APPENDICES

APPENDIX B. PUBLIC INPUT REPORT

June 2023

The Upper Mississippi – Grand Rapids Watershed public kickoff meetings were held in June 2023. Two events were held, one in Tamarack and one in Grand Rapids to accommodate people in the southern and northern portions of the watershed. The goal of these meetings was to hear diverse viewpoints on watershed priorities and values. We also wanted to understand the issues, concerns and opportunities of watershed residents and stakeholders. This information was gathered by having participants complete two activities.

Seven topic areas were identified by the Steering Committee and Policy Committee. These included:

- Lakes
- Rivers / Streams
- Wetlands
- Forests
- Farms
- Groundwater / Drinking water
- Stormwater

Basic information on each topic was compiled into a poster for watershed stakeholders to view during the events. These posters were used to help residents have a shared understanding of the topics.

The events were advertised using print and social media ad campaigns. In addition, Steering Committee members advertised the events using their contact lists and connections. For those who could not attend the events in person, an online survey was made available. The survey ran for one month.

A total of 36 people participated in the events (22 in Tamarack and 14 in Grand Rapids). In addition, an online survey was available for those who could not attend in person. A total of 27 people submitted responses to the online survey.

Kickoff Meeting Activities

Identifying Issues, Concerns and Opportunities

A list of watershed issues, concerns and opportunities was compiled by the Steering Committee for each of the seven topics. The list was used to create a voting poster. Participants from each event used stickers to vote if they agreed on an issue. They were also provided with sticky notes to add new issues if they felt something was missing. A complete list of issues is listed at the end of this report.

Prioritizing Watershed Topics

Event participants were given four $100,000 bills at the beginning of the event. They were asked to view each of the seven topics and think about how they would spend this money to protect and restore natural resources in the watershed in the next 10 years. Money could be spent all on one topic or spread over four.

Other Information

Using a paper survey, we asked participants to describe how they interact with the watershed, and a list of words that describe the watershed. This information was used to understand representation of the seven topic areas. We were also able to generate a word cloud which will be used later in the process to develop our vision statement for the plan.

Online Survey

The online survey mimicked the in-person event as much as possible. The same list of issue statements was listed for each topic, and participants were asked to rank the four highest priority topics.

Results

Where were participants from?

As expected, those who attended the Tamarack meeting were largely from the south while the Grand Rapids meeting participants were mostly from the north. Participants indicated they were from:

- Cromwell
- Tamarack
- Wright
- Hill City
- Grand Rapids
- Swan River
- Big Rice Lake

Participants indicated that they interacted with the watershed in the following ways:

- Residents
- Lakeshore owners
- Forest owners, loggers or people who work in the wood products industry
- Farmers
- City residents
- People who hunt, fish or recreate in the watershed
- People who work in the watershed
- People with cultural or family ties to the watershed

The top three ranked issue statements were collected for each topic:

Lakes

- Some septic systems are too old or not maintained, and they are affecting lake health. (30)
- Lakeshore owners are not aware of their role in protecting lake health (27)
- Aquatic invasive species are affecting lake health or make it difficult to enjoy recreating on our lakes (20)

Rivers / Streams

- Ditched or altered streams need to be restored to their natural state (21)
- Stream banks/shorelines are not well protected or have too much erosion (17)
- People do not know how to protect or restore streams (17)

Wetlands

- Wetlands are at risk of being lost due to development or land use change (27)
- People don't understand the importance/value of wetlands (24)
- Ditching is impacting downstream lakes and streams (22)

Forests

- Forests are at risk of being converted to development, farming or other land uses (26)
- Some tree species are at risk of diseases/pests that are affecting forest health (22)
- Changing weather or environmental patterns are affecting forest health (20)

Farms

- Soil health could be improved with more cover crops, less tillage or grazing management (25)
- Manure runoff or livestock accessing lakes, streams or wetlands are impacting the health of water resources (19)
- There are not enough rules/regulations to protect water resources (18)

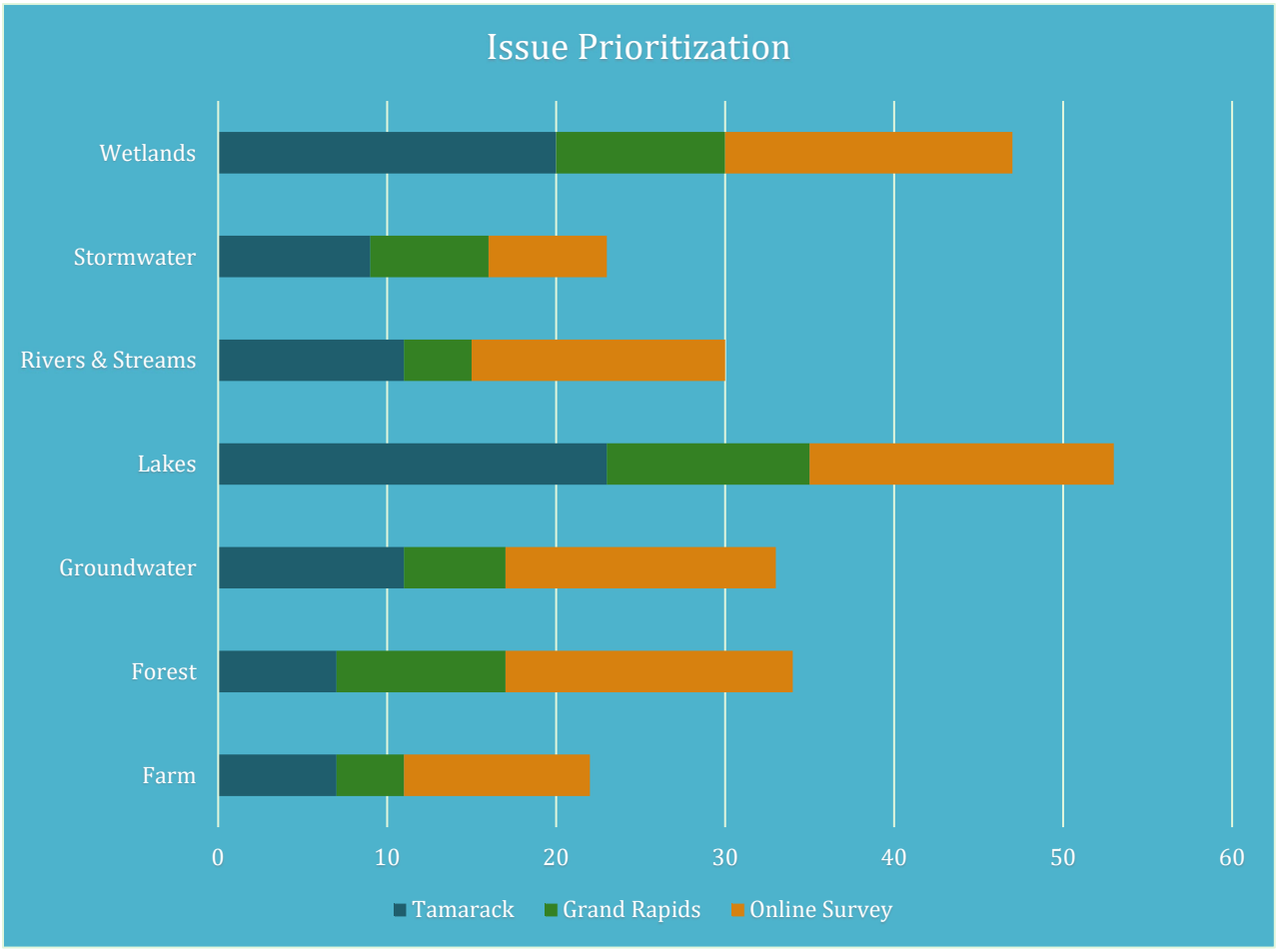
Groundwater / Drinking Water

- More testing/monitoring us needed to track groundwater safety/quality (24)
- More information is needed to understand groundwater risks (18)
- People are unaware of risks or concerns impacting groundwater / drinking water (17)

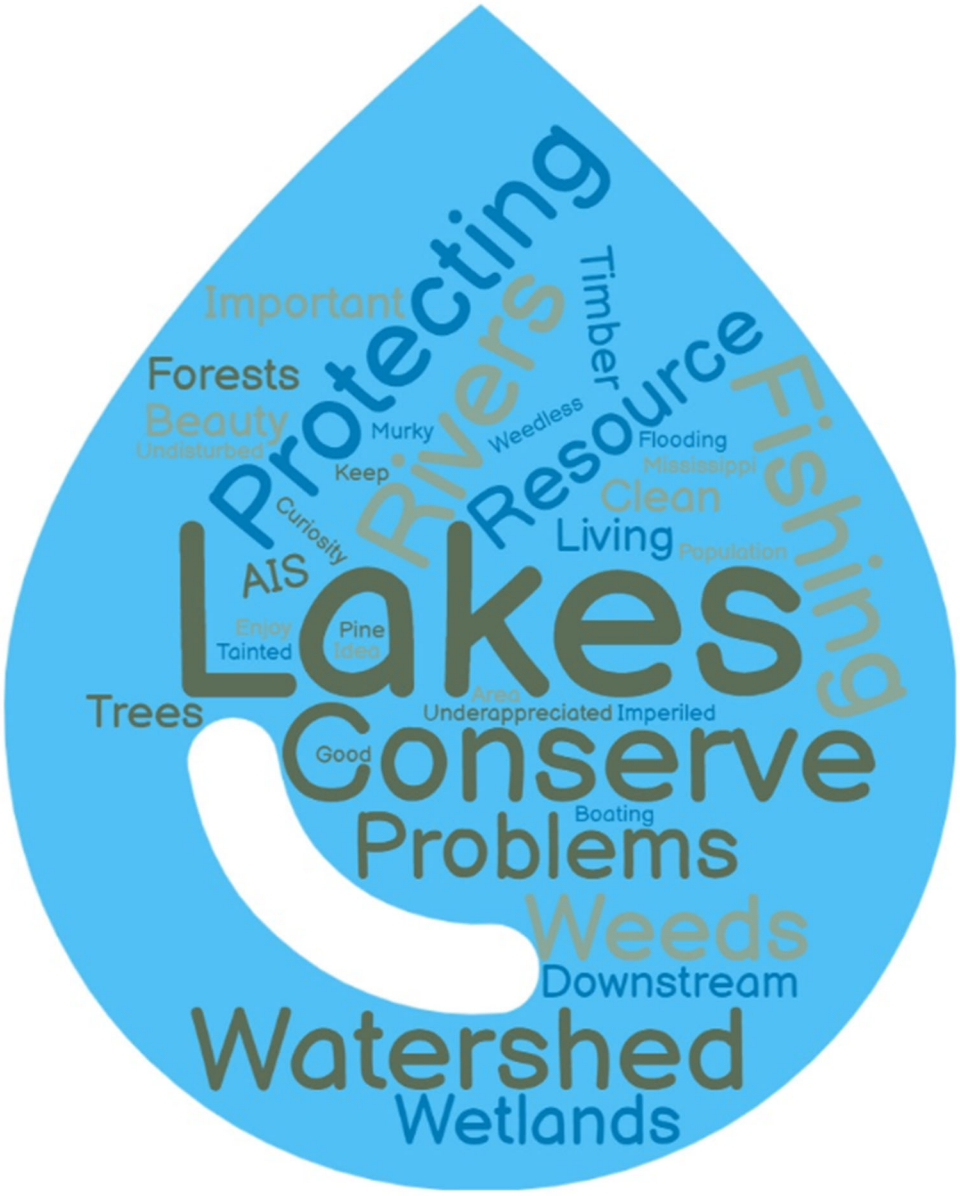
Stormwater

- Salt use from de-icing and dust control are impacting lakes, rivers and wetlands (25)
- Stormwater runoff is affecting lakes, streams and wetlands (19)
- Cities/Towns need professional help to manage stormwater (18)

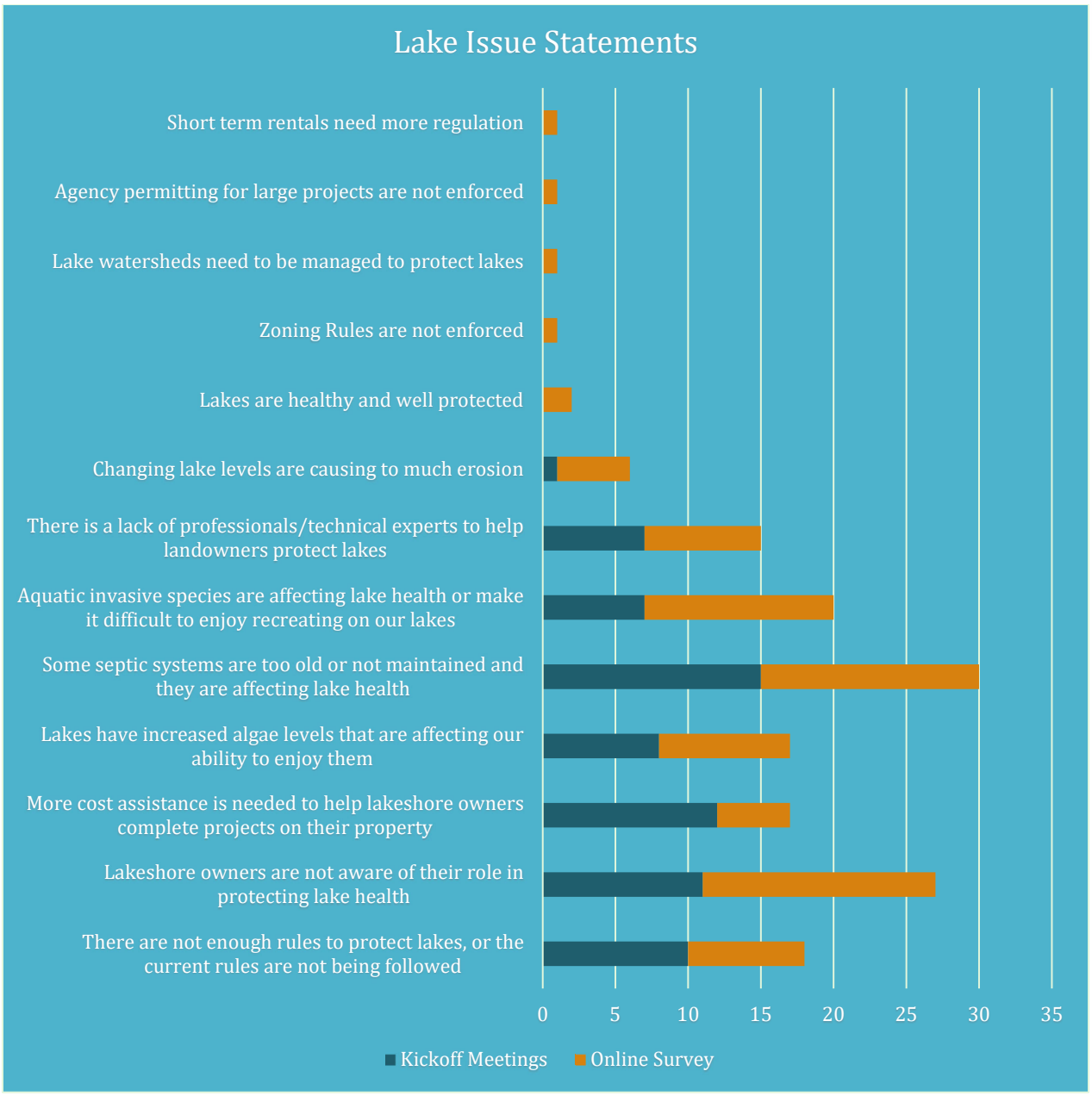
The results of the prioritization activity showed lakes to be the highest ranked topic followed by wetlands. The lowest ranked topic was farms.

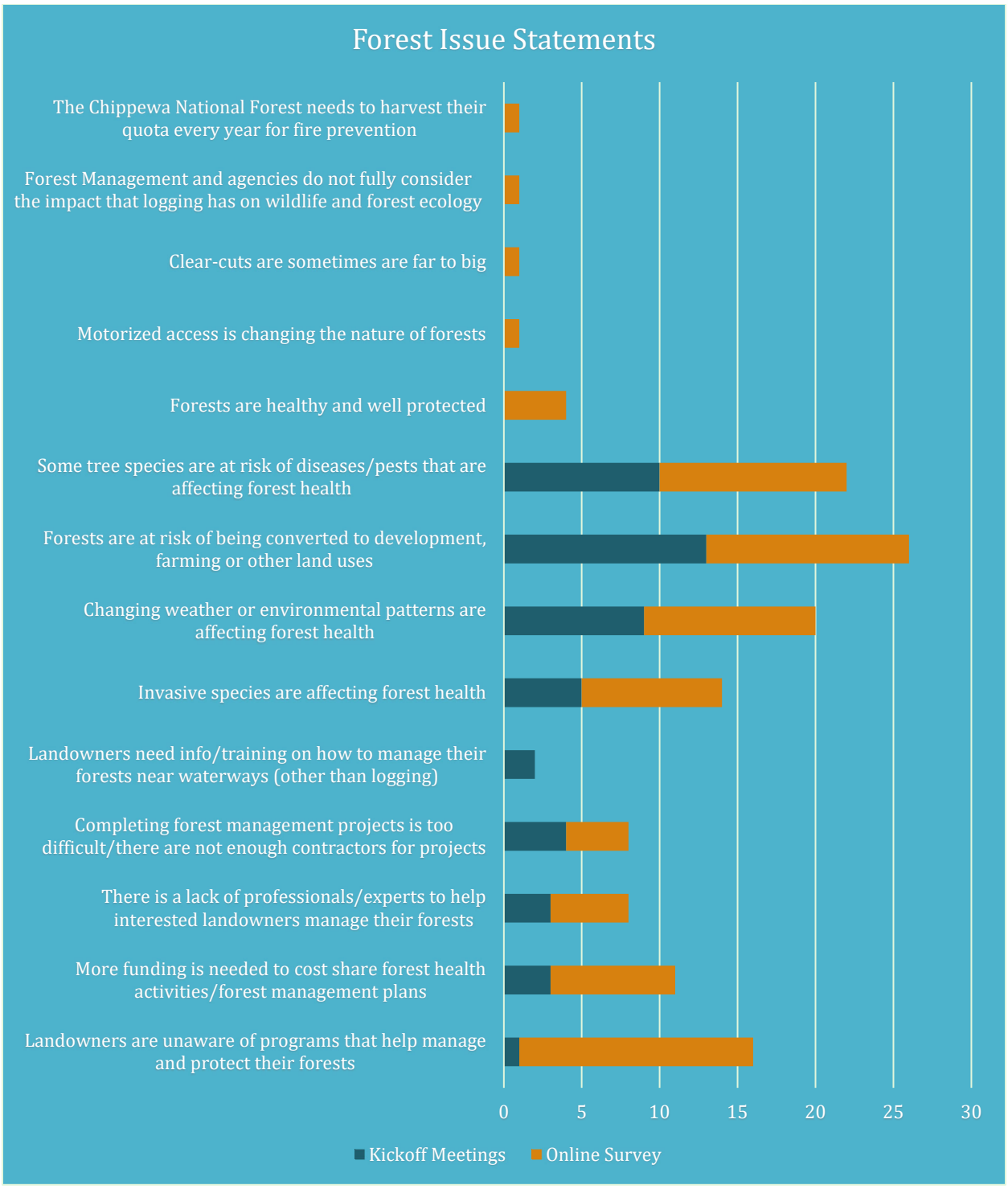


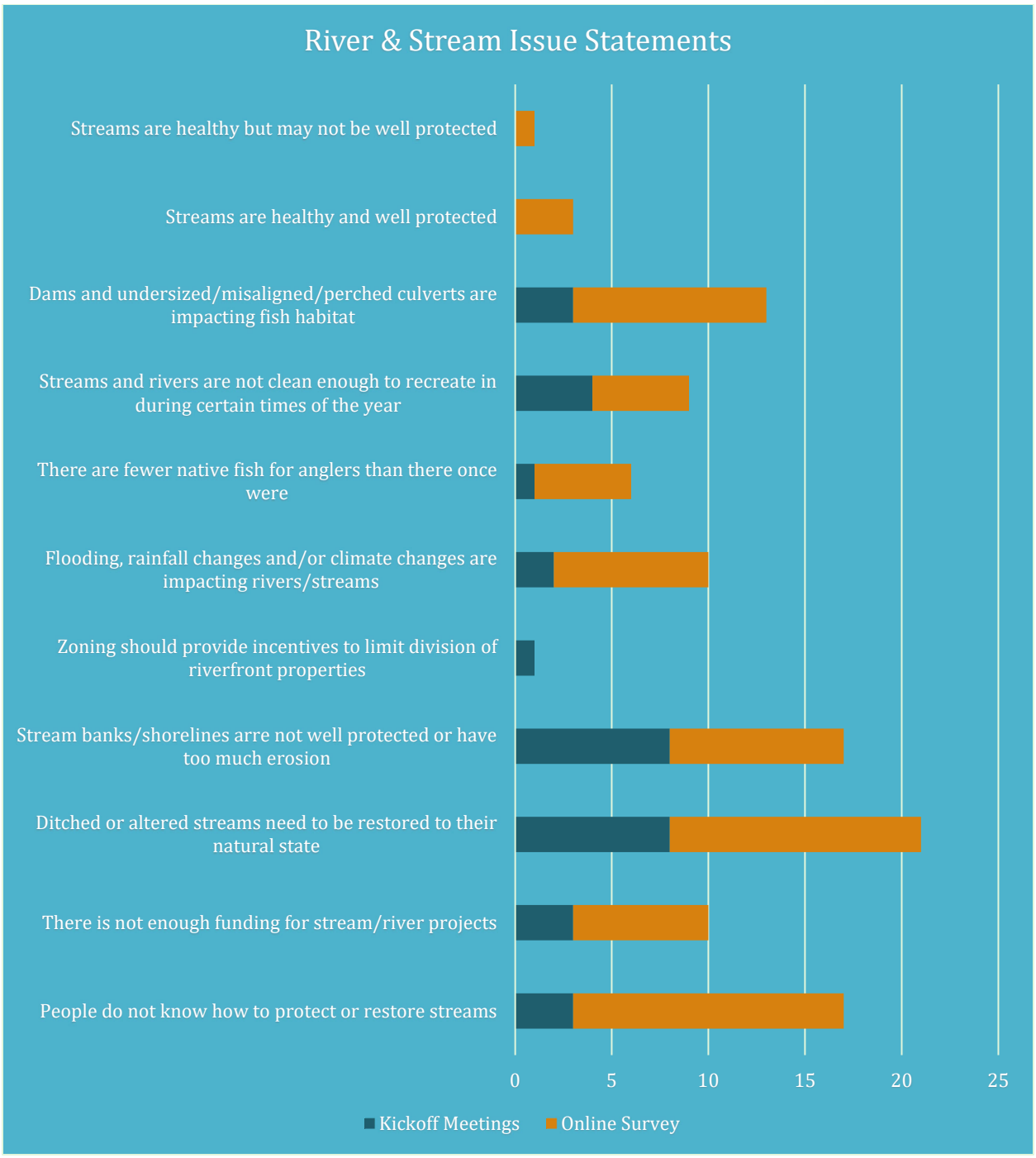
The words used to describe the watershed focused on protecting and conserving the resources of the watershed. A word cloud was created to show the responses to the question: In just 4 or 5 words, when you think of the Upper Mississippi – Grand Rapids watershed, what comes to mind?

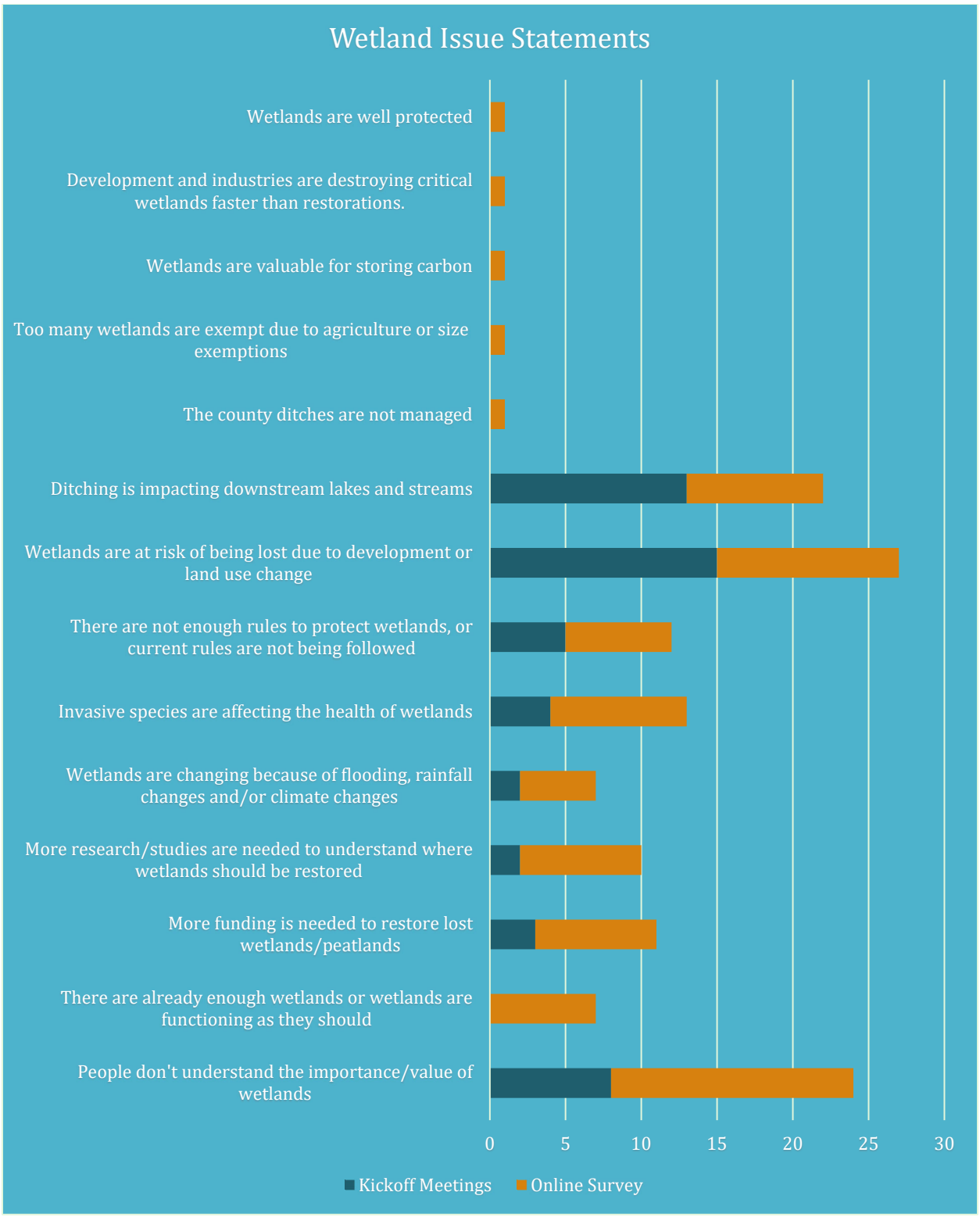


A complete list of the issue statement voting questions and the cumulative score are shown in the figures below.


Lake Issue Statements
Short term rentals need more regulation
Agency permitting for large projects are not enforced
Lake watersheds need to be managed to protect lakes
Zoning Rules are not enforced
Lakes are healthy and well protected
Changing lake levels are causing to much erosion
There is a lack of professionals/technical experts to help landowners protect lakes
Aquatic invasive species are affecting lake health or make it difficult to enjoy recreating on our lakes
Some septic systems are too old or not maintained and they are affecting lake health
Lakes have increased algae levels that are affecting our ability to enjoy them
More cost assistance is needed to help lakeshore owners complete projects on their property
Lakeshore owners are not aware of their role in protecting lake health
There are not enough rules to protect lakes, or the current rules are not being followed
0
5
10
15
20
25
30
35
Kickoff Meetings
Online Survey

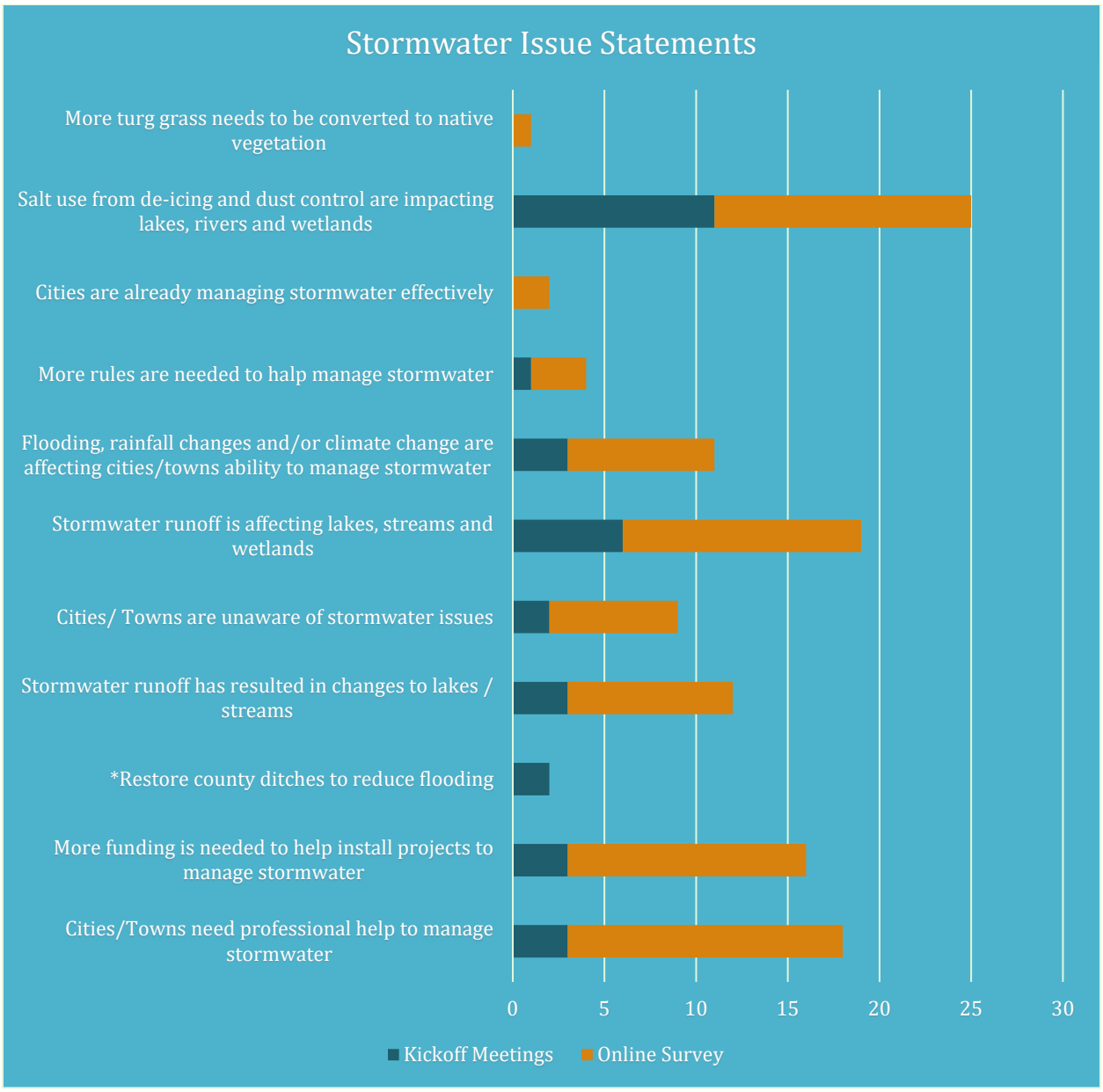

Forest Issue Statements
The Chippewa National Forest needs to harvest their quota every year for fire prevention
Forest Management and agencies do not fully consider the impact that logging has on wildlife and forest ecology
Clear-cuts are sometimes are far to big
Motorized access is changing the nature of forests
Forests are healthy and well protected
Some tree species are at risk of diseases/pests that are affecting forest health
Forests are at risk of being converted to development, farming or other land uses
Changing weather or environmental patterns are affecting forest health
Invasive species are affecting forest health
Landowners need info/training on how to manage their forests near waterways (other than logging)
Completing forest management projects is too difficult/there are not enough contractors for projects
There is a lack of professionals/experts to help interested landowners manage their forests
More funding is needed to cost share forest health activities/forest management plans
Landowners are unaware of programs that help manage and protect their forests
0
5
10
15
20
25
30
Kickoff Meetings
Online Survey

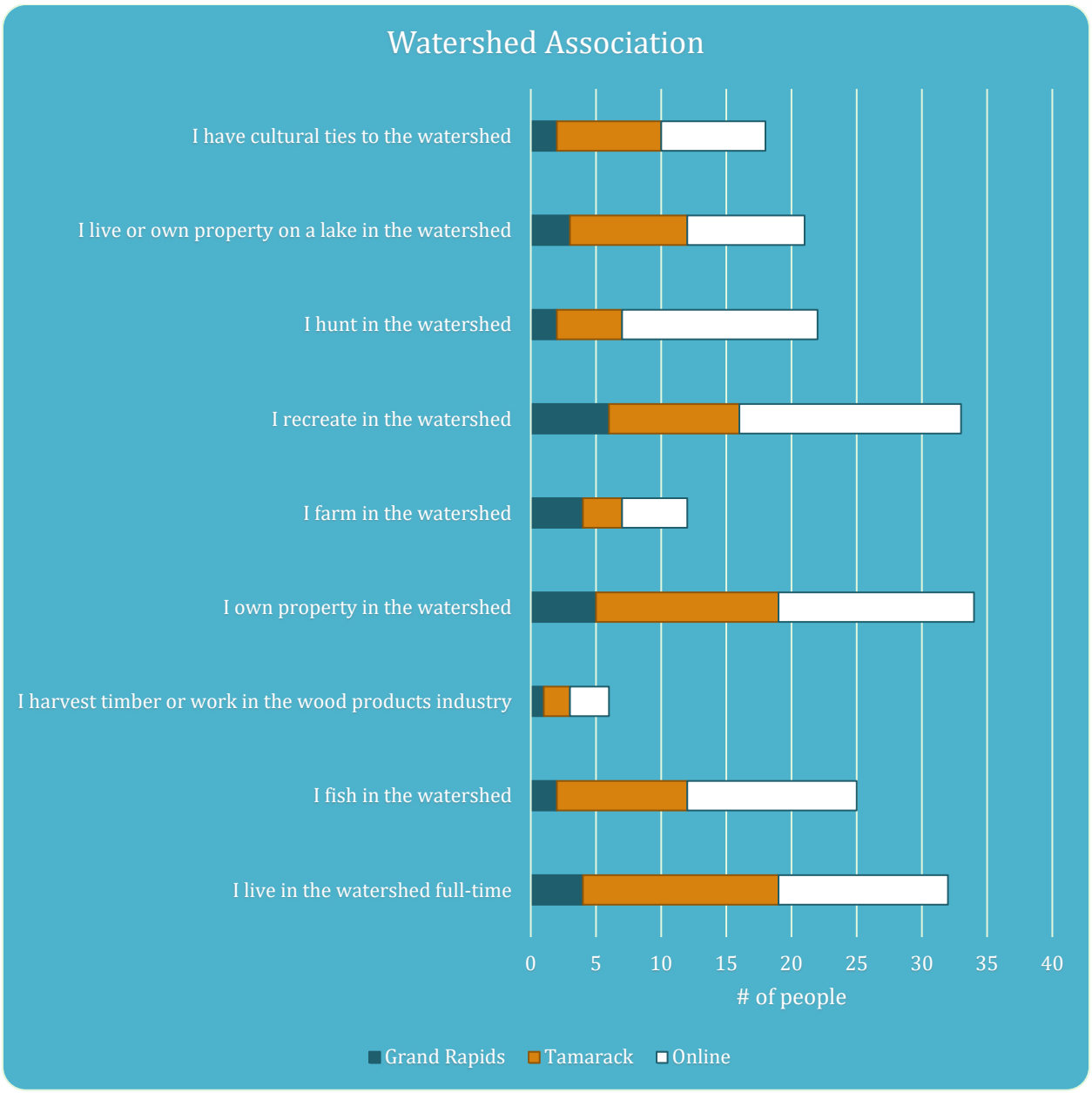

River & Stream Issue Statements
Streams are healthy but may not be well protected
Streams are healthy and well protected
Dams and undersized/misaligned/perched culverts are impacting fish habitat
Streams and rivers are not clean enough to recreate in during certain times of the year
There are fewer native fish for anglers than there once were
Flooding, rainfall changes and/or climate changes are impacting rivers/streams
Zoning should provide incentives to limit division of riverfront properties
Stream banks/shorelines arre not well protected or have too much erosion
Ditched or altered streams need to be restored to their natural state
There is not enough funding for stream/river projects
People do not know how to protect or restore streams
0
5
10
15
20
25
Kickoff Meetings
Online Survey


Wetland Issue Statements
Wetlands are well protected
Development and industries are destroying critical wetlands faster than restorations.
Wetlands are valuable for storing carbon
Too many wetlands are exempt due to agriculture or size exemptions
The county ditches are not managed
Ditching is impacting downstream lakes and streams
Wetlands are at risk of being lost due to development or land use change
There are not enough rules to protect wetlands, or current rules are not being followed
Invasive species are affecting the health of wetlands
Wetlands are changing because of flooding, rainfall changes and/or climate changes
More research/studies are needed to understand where wetlands should be restored
More funding is needed to restore lost wetlands/peatlands
There are already enough wetlands or wetlands are functioning as they should
People don't understand the importance/value of wetlands
0
5
10
15
20
25
30
Kickoff Meetings
Online Survey


Farm Issue Statements
Invasive weeds are a problem
Farmers need more incentives to change industry practices to protect waters
Rotating crops and buffer zones are needed along the Mississippi River
Proper farming techniques can help store carbon
Lots of weltands are being drained of cleared for grazing / farming
Lack of enforcement of cattle near streambanks
Farms are already manages to protect water resources
Flooding, rainfall changes and/or climate changess are impacting farms
Soil health could be improved with more cover crops, less tillage or grazing management
Manure runoff or livestock accessing lakes,streams or wetlands are impacting the health of water resources
There are not enough rules/regulations to protect water resources
Timelines/deadlines for conservation programs are too strict
There os not enough cost share to help farmers install projects to protect lakes, streams or wetlands
There is too much paperwork/restrictions for farmers to enroll in conservation programs to protect lakes, streams or wetlands
Farmers are unaware of programs to help protect lakes, streams or wetlands
0
5
10
15
20
25
30
Kickoff Meeting
Online Survey


Groundwater Issue Statements
Minneosta requires higher standards than bottled water
Groundwater is complicated and needs more stringent protections
A groundwater atlas is needed
Nitrate levels in groundwater is a concern
Groundwater is already protected and safe/healthy
More information is needed to understand groundwater risks
Flooding, rainfall changes and/orclimate changes are impacting groundwater
Groundwater safety/quality is at risk from porous soils
Thr groundwater supply is limites/at risk
More testing/monitoring us needed to track groundwater safety/quality
More rules are needed to protect groundwater
There is not enough funding to help landowners protect groundwater/drinking water
Groundwater withdrawal by extraction industries jeopordizes health, welfare and livelihoods
People are unaware of risks or concerns impacting groundwater / drinking water
0
5
10
15
20
25
30
Kickoff Meetings
Online Survey


Stormwater Issue Statements
More turg grass needs to be converted to native vegetation
Salt use from de-icing and dust control are impacting lakes, rivers and wetlands
Cities are already managing stormwater effectively
More rules are needed to halp manage stormwater
Flooding, rainfall changes and/or climate change are affecting cities/towns ability to manage stormwater
Stormwater runoff is affecting lakes, streams and wetlands
Cities/ Towns are unaware of stormwater issues
Stormwater runoff has resulted in changes to lakes / streams
*Restore county ditches to reduce flooding
More funding is needed to help install projects to manage stormwater
Cities/Towns need professional help to manage stormwater
0
5
10
15
20
25
30
Kickoff Meetings
Online Survey


Watershed Association
I have cultural ties to the watershed
I live or own property on a lake in the watershed
I hunt in the watershed
I recreate in the watershed
I farm in the watershed
I own property in the watershed
I harvest timber or work in the wood products industry
I fish in the watershed
I live in the watershed full-time
0
5
10
15
20
25
30
35
40
# of people
Grand Rapids
Tamarack
Online

With the current rate of land use change in the watershed, what do you think the UM-GR watershed will look like in 50 years?

Tamarack:

- I can't imagine what changes will look like in 50 years
- Hard to predict. Hopefully replanting of forests.
- From the indicators on the wall if interest are followed=clean lakes and recreation. No ability for self-preservation=consumable resources will be gone.
- If talon/riotinto proceeds, in 50 years the watershed will be poisoned by acid mine drainage. RioTinto will be gone, leaving taxpayers on the hook. The water, fish, birds and people will be poisoned. Tamarack will be a superfund site.
- A lot more weeds to come
- Improved lakes.
- A lot more people; change in demographics.
- I expect more emigration to the area because of it's clean air, water and soil. The forests of the watershed will be increasingly valued for mitigation of climate change.
- Overdevelopment along lakes and rivers as more people head north.
- Overdeveloped.
- Probably remain much the same.
- More population.
- Pay attention now or it will be in a sorry state in 50 years.

Grand Rapids:

- Unfamiliar- needs to be preserved though.
- Nonexistent.
- I am concerned that lots of floodplain and wetland will be filled for development.
- Nothing good. Too much development, too many homes and their mown lawns too close to lakes. Not enough undisturbed forestland.

What would you like the watershed to look like in 50 years?

Tamarack:

- Clean and as close to untouched as possible.
- Stay the same.
- Wilderness.
- Clean and healthy.
- Wisely planned development- younger demographic.
- Clean water for our grandchildren.
- Improved water.
- Good stewardship of all resources.
- Safe place to do recreational things, fish and swim.
- Cleaner.

- I would like the peatlands restored, the marshes, wild rice lakes and rivers flourishing. The water will be clean. People will be able to eat more than 1 fish a week. The birds, especially our eagles and raptors will flourish rather than die of mercury poisoning.
- Try not to change things. Stop altering, and maybe the place will look as it does today.
- Close to what it is now.
- Continuation of clean rivers and lakes.
- Forested.

Grand Rapids:

- Undisturbed, clean, respected. Better lakeshore protections/plantings. No more "daylight" septic systems flowing into the rivers. More recreation that doesn't result in damage. More wildlife species and more resilient rivers/streams during flooding and drought.
- I would like the watershed to look much less "managed" with wild areas along wetlands and floodplains.
- Lush, abundant, and tended by Original Free Nations (Dakota & Anishinaabe).
- Heavily forested; diverse and healthy tree population. Lakes protected from AIS (surveillance at landings) and septic/sewer system rehaul. No farming or industry that impacts water negatively.
- Clean, clear and full of fish
- Accessible for the elderly ready available and handicapped programs
- Clean and healthy! We owe that to the next generations.
- Healthy and thriving
- Natural looking waterways with access for homes and cabins which are mainly hidden from view from the water; clean waters; planned response from climate change to keep vegetation including forests healthy; a place for humans and the natural environment to coexist
- Same or better than now
- natural and healthy
- Healthy lakes, streams, froests and wetlands the provide abundant recreational opportunities.
- I'd like it to be as good or better than it is now.
- Lakes without algae
- Less conversion to ag and more wetlands protected.
- Healthy and safe & fair for all
- Show modest improvement in quality and knowledge.
- Healthy in all areas.
- I want the watershed to be pristine, unencumbered by industry, and healthy for future generations to enjoy. I want strong processes and assurances that the ecology in the region will not be heavily and permanently impacted and altered by development, industrial projects, human recreation, or pollution. I want dams to be reviewed and removed, if their impact is no longer effective. I want mercury to be seriously addressed and stopped before all of the food webs including us are consuming it to

our detriment. I want run-off like pesticides, chloride, and sewage to no longer be a substantial risk to waterways. I want wetlands to be preserved as the life blood of the natural ecology of our region. I want the deep and rich heritage of our river and its many inhabitants to be protected, defended, and preserved so that future generations can understand and thrive in our beautiful region.

- More fish less people
- Much as it is now, with a fairly high percentage of public, undeveloped land helping to protect our lakes and rivers. A continual engagement and participation of privately ownd shoreland owners to protect water quality through incentives and education will help as well.
- I would like to see the army corps stop flooding in Pokegama lake. I would like to see a new Hydro power idea to help our power needs in the future in Itasca County.

Are there any topics or resources we didn't cover at the kickoff meeting?

Tamarack:

- I don't know yet.
- No.
- None.
- Problems with gold mining.
- It looks like you have this covered.
- No.
- I always enjoy learning at the meetings.
- Not a single poster addressed the threat that hard rock mining will bring to this very area. This is a real threat- no nickel sulfide mine has ever polluted the watershed. Doesn't matter what the shills for riotinto say. These are the facts.
- Wild rice, food resources that the watershed provides.

Grand Rapids:

- Providing a list of current resources to people attending this meeting would be helpful. Are there resources for lake (property) owners? River (property) owners? Professionals interested in helping with watershed restoration or management projects?
- Please avoid framing this project as a search for studying problems, but rather prioritizing problems. We know we're negatively impacting wetlands in our pursuit of personal benefit.
- Traditional Native multigenerational or millennial care for WATER, treaty rights of the nation-to-nation status with the U.S. government through congress (Constitutional instituted rights).

APPENDIX C. GOAL CALCULATIONS

Goals were calculated for each topic area in the UM-GR CWMP. This section describes how the numbers were calculated for each goal.

10-Year Goals for the UM-GR Watershed	
 **Lakes**	Reduce phosphorus in Priority Enhance and Restore lakes by **40lbs/yr**; Restore **3 linear miles** of shoreline on priority lakes
	Protect or enhance **1 mile** of priority streams  **Streams**
 **Farms**	Implement **3,659 acres** of agricultural best management practices (BMPs)
	Implement **8,162 acres** of forest protection; Implement **36,000 acres** of forest management  **Forests**
 **Wetlands**	Maintain and enhance wetlands and peatlands at **current rate**
	Complete stormwater retrofit analysis for **3 communities**; Implement **5 stormwater project**s  **Stormwater**
 **Groundwater**	Seal **50 unused wells**.

Lakes

Lakes

Reduce phosphorus in Priority Enhance and Restore lakes by **40lbs/yr**; Restore **3 linear miles** of shoreline on priority lakes

Phosphorus

The majority of the lakes in the UM-GR Watershed have excellent water quality, with very low phosphorus concentrations and forested lakesheds. These lakes are a focus for protection, and because their phosphorus concentrations are already so low (<20 µg/L), the Steering Committee determined it would be hard to have a loading goal that could be met in 10 years. Projects implemented on the "Enhance" and "Restore" lakes will reduce phosphorus by small increments. Therefore, the goal of 40 lbs applies to all the priority lakes and will be added up by each project installed (shoreline restoration, rain gardens, stormwater management, etc).

Shoreline

Minnesota's shorelines are being degraded at a rate of 1-2% each decade (Radomski 2024). The length of shoreline of the priority lakes, minus the "Vigilance" lakes and Big Sandy, totals 156 miles. The goal of 3 miles of restoration is 2% of 156 miles, therefore trying to keep up with the shoreline loss in the next 10 years and hopefully reverse this trend.

Streams

Protect or enhance **1 mile** of priority streams

Streams

Data from NRCS and eLINK shows that 2 miles of livestock pipeline and 0.5 miles of streambank restoration has been completed in the watershed between 2004 – 2023. This is an average of 0.13 miles/year. It was estimated that 1 mile could be accomplished by local partners in 10 years. If NRCS implements riparian projects, the 1 mile goal could be exceeded for the watershed.

Farms

Farms

Implement **3,659 acres** of agricultural best management practices (BMPs)

The Farms goal was determined as a percentage of agricultural acres in the watershed. Currently 3% of the crop and pasture acres have BMPs. This goal adds another 7% to get to 10% total for the watershed.

Total Ag Acres in the UM-GR	Crop: Pasture/Hay: **Total =**	7,358 acres 44,919 acres **52,277 acres**
Current Practices	CRP: MAWQCP: NRCS Crop: NRCS Pasture: Elink Crop: Elink Pasture: **Total =**	72 acres 814 acres 78 acres 668 acres 0 acres (thru 2020) 0 acres (thru 2020) **1,632 acres (3%)**
Goal Setting	**GOAL: 3,659 acres (366/yr) = 7%** **Brings total coverage to 10%**	

Forests

Implement **8,162 acres** of forest protection;
Implement **36,000 acres** of forest management

Forests

The protection goal was developed as 10% progress towards the landscape stewardship goals.

Total Protected Acres	Total Acres: Total Protected: % Protected	1,332,794 acres 984,370 acres 74%
Current Practices	Total Needed for LSP Goals:	81,620 acres
Goal Setting	**10% progress towards LSP Goals:** **Annual Progress:** **SFIA, easements, acquisitions**	**8,162** **816/yr**

The forest management goal was determined by tracking past progress in implementation. An average of 30 Forest Stewardship Plans have been written in the past three years. The goal is to continue this pace for the next 10 years.

Total Managed Acres	Total Acres: Total Private Acres: Total Forest Acres: Total FSP Acres: % Forest with plans	1,332,794 acres 640,340 acres 501,076 acres 178,418 acres 36%
Current Practices*	2023: 34 plans written 2022: 30 plans written 2021: 30 plans written Average size = 120 acres each	
Goal Setting	30 plans/year x 10 years = 300 plans 300 plans x 120 acres = 36,000 acres of plans	

Stormwater

Complete stormwater retrofit analysis for **3 communities**;
Implement **5 stormwater project**s

Stormwater

The stormwater goal was set by determining the current progress of stormwater studies in the watershed. The Advisory Committee spent multiple meetings gathering and revising the information. The full summary can be found on page 76 of the plan in the Stormwater topic section.

Groundwater

Groundwater

Seal **50 unused wells**.

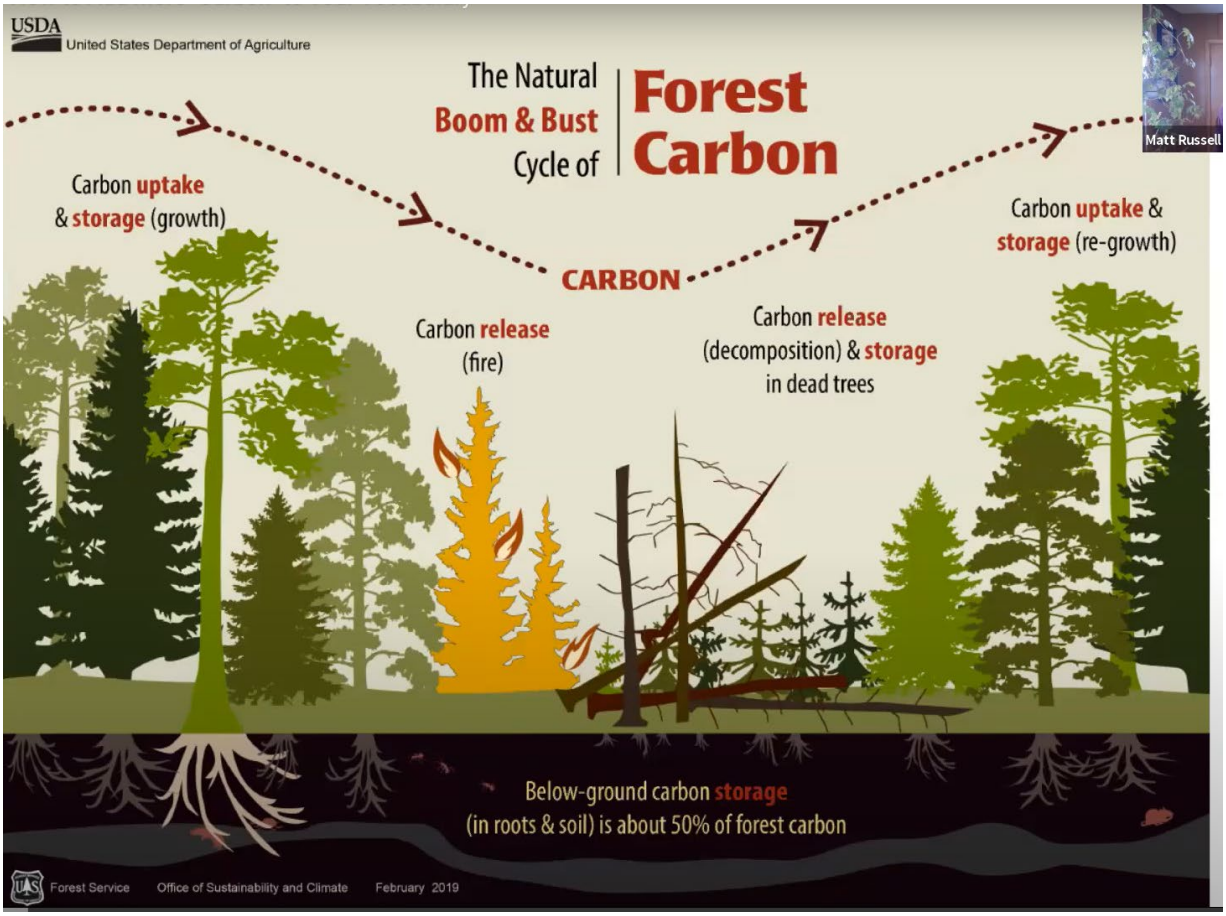
eLINK data showed that 4 wells had been sealed in the watershed since 2007. Planning Partners wanted to spend more effort on well sealing and thought 5 per year was reasonable to achieve in the next 10 years.

Carbon Benefits

Carbon benefits were calculated as additional stacked benefits from implementing plan goals.

Forests

Using the plan's Forest Management Goal, the carbon stored in the existing forests was quantified. Because this storage already exists, it was called "protected carbon storage" in the plan.



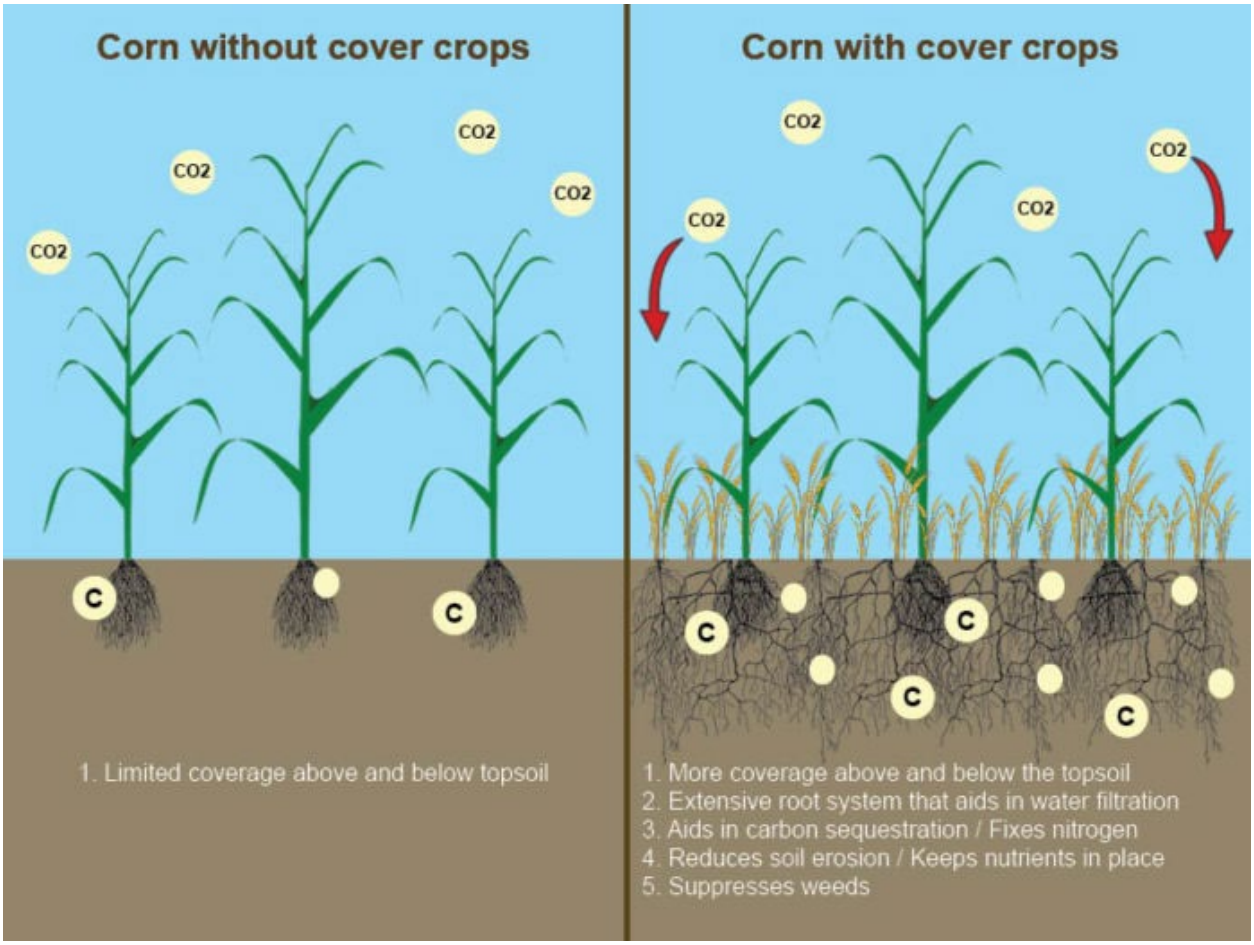
Reference for carbon calculations:

US Forest Service Forest Inventory and Analysis. EVALIDator tool:

https://www.fs.usda.gov/ccrc/tool/forest-inventory-data-online-fido-and-evalidator

Cover Crops

The number of acres that currently have Ag BMPs and the goal number of increased BMPs was used to quantify carbon sequestration gained from those practices as this would be new carbon capture.



Reference for carbon calculations:

COMET-Planner tool. Carbon and Greenhouse Gas Evaluation for NRCS Conservation Practice Planning. USDA and Colorado State University. Available at: http://www.comet-planner.com/

Storage Benefits

Storage benefits were calculated as additional stacked benefits from implementing plan goals.

Forests

Using the plan's Forest Management Goal, the amount of storage was quantified that would be lost if existing forests were cleared for agricultural production or subdivisions for development. Therefore, it was called "protected water storage" in the plan.

Reference:

Senay, G. B. and Kagone, S., 2019, Daily SSEBop Evapotranspiration: U. S. Geological Survey Data Release, https://doi.org/10.5066/P9L2YMV

APPENDIX E. REGULATORY COMPARISONS

The following table compares the ordinances between all the counties in the UM-GR Watershed.

General Ordinance Standards	Aitkin	Carlton	Cass	Itasca	St. Louis	Comments
County Wide Zoning Ordinance	Yes	Yes	Yes	Yes	Yes	
Department of Natural Resources Approved Shoreland Ordinance	Yes	Yes	Yes	Yes	Yes	**St. Louis**: has developed a trout stream river classification indented to provide increased protections
Subsurface Septic Treatment Systems Point of Sale – County Wide	Yes	No	Yes	Yes	Yes	**Carlton:** Inspection only required in shoreland areas. **Itasca**: Sale or transfer require certificate of compliance or escrow funds for upgrading. There are some exemptions.
Feedlots	Yes	Yes	Yes	Yes	Yes	**Aitkin:** New feedlots must not be located in the shoreland. Modifications or expansions to existing feedlots that are located within 300 feet of the OHWL or within a bluff impact zone are only allowed if they do not encroach into the existing setbacks. **Cass**: Additional restrictions on the maximum animal density allowances in shoreland areas. **Carlton:** Must follow MPCA standards. **Itasca**: On all lakes, animals shall be set back 150 feet, No animals may be fenced in the shore impact zone, bluff impact zone or steep slopes. New feedlots are only allowed in farm residential zoning districts, prohibited in all shoreland overly zoning districts, and must follow state feedlot regulations. Manure spreading in shoreland overlay zoning district must have an approved plan by the Itasca County SWCD and is prohibited in the shoreland impact zone. **St. Louis**: Runoff from animal waste directly into a lake, river, unsealed well or wetland is not allowed. In FAM zone, animals are allowed in shoreland area for watering purposes but require an approved USDA plan. Restrictions on animal density and zoning districts.

General Ordinance Standards	Aitkin	Carlton	Cass	Itasca	St. Louis	Comments
Subdivision Ordinance	Yes	Yes	Yes	Yes	Yes	
Wetland Conservation Act	Yes	Yes	Yes	Yes	Yes	
Grading & Filling - (Shoreland)	Yes	Yes	Yes	Yes	Yes	
Riprap-Permits	Yes	Yes	Yes	Yes	Yes	**Aitkin:** Only allowed in situations where active erosion exists. Any permit must also contain a plan to establish a vegetative buffer with the depth determined by the Aitkin Environmental Services Office. **Carlton & Cass**: Only be allowed in situations where active erosion problems exist that cannot be controlled using natural mulch, biomat, or similar bioengineering. Methods must be approved by the environmental services office. Any riprap plan must include a plan to establish a vegetative buffer. **Itasca**: Allowed for erosion control. To the extent possible, riprap should be designed to display natural aesthetics. **St. Louis**: No permit needed if projects comply with state rules.
Stormwater	Yes	Yes	Yes	Yes	Yes	**Aitkin & Stormwater:** Development must be planned in a manner that minimizes disturbed areas, runoff velocities and erosion potential. Stormwater management facilities must be designed and constructed by a qualified individual consistent with the SWCD office. New stormwater outfalls must provide filtering and settling of suspended solids. No direct connection shall exist for public waters. **Cass**: developments with one acre or more of impervious surface shall have stormwater prevention plan, and with grading & filling within designated distances of shoreline (depends on amount moved plus distance) **Itasca**: Subdivisions or Conservation Development within a shoreland overlay zoning district require an erosion control and stormwater management plan. One or more acres require a stormwater permit from MPCA. **St. Louis**: No permit is needed if general minim standards are followed.

General Ordinance Standards	Aitkin	Carlton	Cass	Itasca	St. Louis	Comments
Vegetation Removal - Bluff/Steep Slopes	Yes	Yes	Yes	Yes	Yes	**Aitkin:** Permit required. Must not be intensively cleared and an erosion and sediment control plan will be submitted to the SWCD office **Carlton:** Permit required and cleared areas must be stabilized with native vegetative cover to prevent erosion. **Cass:** Permit needed except for the removal of dead, down or safety hazard trees. **Itasca**: Intensive vegetation clearing within the bluff impact zone and on steep slopes is not allowed. **St. Louis**: No permit is required for most vegetation removal so long as they are not intensively cleared and a sediment control plan is approved by the county.
Vegetation Removal (Shoreland	Yes	Yes	Yes	Yes	Yes	**Aitkin:** The intent is to have a shoreline buffer consisting of trees, shrubs and ground cover for the purposed of retention and filtering runoff. Permits for vegetation removal is required. Limited pruning is allowed for dead, diseased or hazard trees, and landowners are encouraged to replace them. **Cass**: Restricted to 8 feet in width in areas of bluff or steep slope greater than 24%, 20 feet in width for residential properties and 50 feet in width for water-oriented commercial properties. **Carlton:** Permit required and cleared areas must be stabilized with native vegetative cover to prevent erosion. **Itasca**: Limited clearing of trees and brush is allowed to provide a view of the water and accommodate the placement of permitted water-oriented structures. Access paths shall not exceed 12 feet. Vegetation within the shore impact zone shall be maintained to screen structures with trees and shrubs so that structures are at most 50% visible from public waters in the summer leaf on conditions. Shading of rivers must be preserved. **St. Louis**: No permit required if minimum general standards are followed.

Minnesota Forest Resources Council. 16 September 2020. Climate Change and Minnesota's Forests.

Minnesota Historical Society (MHS). N.d. The Ojibwe People. Accessed at: https://www.mnhs.org/fortsnelling/learn/native-americans/ojibwe-people#:~:text=Ojibwe%20oral%20history%20and%20archaeological,Marie%20and%20the%20surrounding%20area.

Minnesota Pollution Control Agency (MPCA). 2018. Mississippi River – Grand Rapids Watershed Monitoring and Assessment Report. Document wq-ws3-07010103b

Minnesota Pollution Control Agency (MPCA). 2019. Mississippi River – Grand Rapids Watershed Restoration and Protection Strategy Report. Document wq-ws4-61a

Minnesota Pollution Control Agency (MPCA). 2019. Mississippi River – Grand Rapids Watershed Stressor Identification Report. Document wq-ws5-07010103a

Minnesota Pollution Control Agency (MPCA). 2022. Impaired Waters List. Document wq-iw1-73

Minnesota Pollution Control Agency (MPCA). 2024. Feedlots in Minnesota Dataset. Accessed from MN Geospatial Commons March 2024.

Minnesota Pollution Control Agency. 2024. Feedlot permits. Accessed https://www.pca.state.mn.us/business-with-us/feedlot-permit May 2024

United States Department of Agriculture (USDA). January 2024. Climate Change Impacts on Minnesota Agriculture

United States Geological Survey (USGS). 2019 National Land Cover Database (NLCD).

University of Minnesota Aquatic Invasive Species Research Center (MAISR). June 2023. Invasive Phragmites. Accessed https://maisrc.umn.edu/sites/maisrc.umn.edu/files/2023-06/phragmites-compressed_1.pdf May 2024.

University of Minnesota Center for Transportation Studies. 22 October 2022. Stormwater control strategies help prevent phosphorus pollution of Minnesota's waterways. Accessed https://www.cts.umn.edu/news/2022/october/stormwater May 2024

University of Minnesota Duluth. 3 June 2020. Economic Impact of Ferrous and Nonferrous Mining.