



COMPREHENSIVE PLAN

2022-2027

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**Washington
Conservation District**
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Washington Conservation District Mission

To enhance, protect, and preserve the natural resources of Washington County through conservation projects, technical guidance, and educational services to citizens and local government

Encouraging voluntary conservation efforts since 1942

Natural Resources – Definition

Lakes, wetlands, streams, groundwater, rivers, natural areas, wildlife habitat, soil, forests, and other natural features in Washington County

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INTRODUCTION

Comprehensive Plan Purpose

The Comprehensive Plan will guide the Washington Conservation District (WCD) to effectively achieve its goals in the District programs and to develop its grant applications, collaborative initiatives, technical service agreements, and annual workload. This Plan will extend from 2022 through 2027.

This Plan serves to guide County-wide activities of the WCD and functions as an umbrella plan to supplement the Lower St. Croix Comprehensive Watershed Management Plan (LSC 1W1P) that applies to the St. Croix Basin within the WCD. See Appendix B for Resolution adopting the LSC 1W1P.

Washington Conservation District (WCD) Primer

The WCD is a special purpose local unit of government dedicated to the management of soil and water resources in Washington County, Minnesota. Originally formed in 1942, the WCD is a Soil and Water Conservation District (SWCD) as set forth in Chapter 103C, Minnesota Statutes. This law gives wide ranging authority to SWCDs to plan and implement necessary practices to benefit and preserve the soil and water resources in Minnesota.

The WCD's mission is to, "enhance, protect, and preserve the natural resources of Washington County through conservation projects, technical guidance, and educational services as governed by MN state statute 103C.005 Soil and Water Conservation Policy."

Chapter 103C also allows a SWCD to cooperate or enter into agreements with any occupier, agency, or unit of government. Also, within the limits of available appropriations, the WCD may furnish financial or other aid to implement the policies within the WCD.

The WCD is governed by a five-member Board of Supervisors who are responsible for establishing policy, supporting programs and activities, and

making fiscal decisions concerning the soil and water resources of the county. Washington County is divided into five supervisory districts (See Figure 1) of which one supervisor is elected to represent for a four-year term.

Natural Resource Highlights

Washington County is the fourth smallest county in Minnesota, encompassing 423 square miles of land and water surface. It is 38 miles from north to south and 14 miles from east to west. Elevations in the county range from 675 feet at Lake St. Croix to over 1,100 feet in Section 17 in Woodbury. The St. Croix River forms the entire eastern border of the county while the Mississippi River forms the southern and southwestern border. Washington County's physical environment includes a diverse mix of farmland, mixed deciduous forest and woodland, open prairie, wetlands, and urban and suburban conditions (See Figure 5). Its surface and underground features vary as well, with over 200 lakes, a dozen trout streams, and two major rivers (See Figure 3 for a map of major surface water bodies). Important natural features within the County include: the Mississippi River, a popular recreational and important commercial waterway; the bluffs and ravines along the St. Croix River; the county's abundant streams, wetlands, lakes, forests, and groundwater; and the prime farmland soils throughout the county.

Washington County's unique and diverse natural features are sensitive to ecological stressors such as pollution and land use changes. This uniqueness also presents many opportunities for conservation.

WCD Policies

The WCD uses adopted policies to provide efficient administrative operations as well as operational guidelines. Appendix A includes a summary of WCD Board-adopted policies.

WCD Accomplishments

The WCD completed over 266 practices from 2016 to 2020 (the period of the previous comprehensive plan), removing over 1,000 lbs of total phosphorus

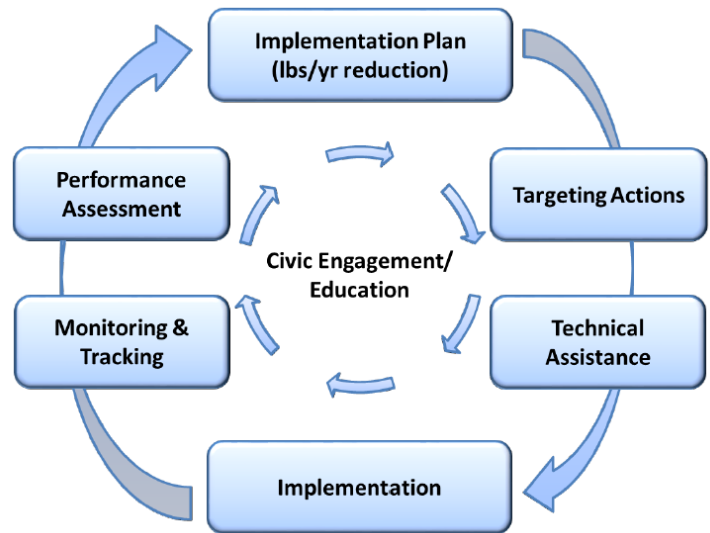
and 183,000 lbs of total suspended solids from prioritized water bodies. Of the agricultural practices installed during this time period, 22.6 percent were categorized as “prairie restorations,” 16.5 percent as “conservation cover,” and 12.3 percent as “grade stabilization.” Of all urban practices installed, 29 percent were categorized as “raingardens,” 18 percent as “native landscaping,” and 13 percent as “shoreline buffer stabilization.” In 2021 the WCD created a new ArcGIS Online database to track and summarize installed practices, landowner site visit, and educational outreach activities. This database is available to the public and can be queried to summarize date ranges, practice types, and practices installed within a specific watershed. A 2016-2020 snapshot of the public ArcGIS Online dashboard (Figure 19) can be found in Appendix H.

Adaptive Implementation

The WCD shall implement its programs following the Adaptive Implementation Model. Adaptive implementation includes a continuum of:

- Determining planning priorities (e.g. WCD Comprehensive Plan, Strategic Plan, TMDL, Groundwater Plan, Watershed Plan, and/or County Conservation Plan)
- Prioritization to determine the what, where, and when of education, technical assistance (TA), and implementation
- Civic engagement and education to promote conservation priorities and motivate voluntary participation
- technical assistance to implement solutions (project or program)
- Implementation of practices on the ground
- Monitoring to identify current status of resources and determine trends
- Performance assessment at best management practice (BMP), field, and catchment scale to determine implementation effectiveness
- Regular review of priorities and methods

This adaptive process will be integrated into annual workload planning to maximize the positive benefits of WCD activities.



GUIDING PRINCIPLES

The Comprehensive Plan includes **Ten Guiding Principles** to recognize that implementation of this Plan must be holistic, balanced, equitable, integrated and multi-disciplinary. The influence of the Guiding Principles is seen throughout the Plan as they shape many of the individual Goals, Strategies, and Actions.

Collaboration

All of the goals can only be achieved through collaboration. Further, effective collaboration can maximize government efficiency. The WCD will develop collaborative partnerships with public and private entities and individuals to achieve all of our goals.

Stable Sustainable Funding

Stable funding is needed to allow full execution of the WCD Goals and incentivize great collaboration between partners. The WCD will identify and pursue opportunities to provide funding directly to the WCD to supplement and match local funding partnerships.

Multiple Benefits

Focus efforts on conservation practices that work toward all of these Guiding Principles and achieve multiple conservation goals. Concepts such as Green Infrastructure will be emphasized to satisfy this principle.

Human Health

Avoid or minimize negative health impacts and improve opportunities for healthy, active lives. Protect surface and groundwater resources. Promote connection with the environment to reduce nature deficits.

Environmental Health

Weave nature into the County and foster a healthy environment that sustains people, neighborhoods, and fish and wildlife. Recognize the intrinsic value of nature and sustain the ecosystem services of the WCD's air, water, and land.

Equity

Promote equity and environmental justice by identifying and reducing disparities, providing equitable access to conservation, and improving socio-economic opportunities for under-served and under-represented populations. Additionally, WCD will intentionally engage under-served and underrepresented populations in decisions that affect them.

Resilience

Reduce risk and improve the ability of individuals, communities, economic systems, and the natural and built environments to withstand, recover from, and adapt to changes from natural hazards, human-made disasters, climate change, and economic shifts.

Energy

Promote conservation activities that reduce energy consumption and provide opportunities for energy production.

Local Food

Reduce carbon emissions and support local food systems.

Economic Prosperity

Support a low-carbon economy, foster nature-based recreation, and support local agricultural production. Promote conservation-minded and land-dependent revenue generation activities.

RESOURCE INVENTORY

Soil Survey & Land Cover

Washington County has a wide range of soil types and geomorphological features that characterize or distinguish the northern and southern parts of the county (see Figures 13-14). The St. Croix Moraine is the dominant geomorphic feature, and is responsible for creating the rolling/depressional topography in the north-central part of the county. Soils in this region are often deep and composed largely of glacial outwash and till—typically coarse and well drained. The Hugo Lake Plain makes up the northwest part of the county with larger amounts of fine sand and silt deposited from glacial lakes and outwash. Wetlands and shallow lakes are common in this region. The Denmark Dissected Plain is a unique feature of the southeast portion of the county, representing the extent of the last glacial advance. Thin soils and loess-covered bedrock are common in this region with relatively few lakes, wetlands, or surface water features. The risk of groundwater contamination in this area is particularly high due to porous soils and karst or near-surface bedrock features. Finally, the soils within the Mississippi and St. Croix River valley and terraces are largely comprised of sand, gravel, and alluvial sediments deposited from expansive glacial meltways. Aggregate mining is an important industry in these corridors, partially along the Mississippi.

Washington County also has a complex mixture of urban and suburban land uses, the development of which has accelerated considerably in recent decades. Figures 5-14 provide a detailed picture of Washington County soils, geomorphic features, and

land cover types as shown in the 2014 Washington County Groundwater Plan and Washington County 2040 Comprehensive Plan. These data drive much of the planning and prioritization processes for WCD. Other plans used to inform WCD prioritization efforts include:

High Priority Problem Areas

This Plan addresses five High Priority Problem Areas and with reference to the studies, inventories, and comprehensive plans completed by the WCD and its partners over the past 20+ years. Appendices B, C, and D provide a listing of the documents used to identify these High Priority Problem areas, including a comprehensive list of subwatershed assessments that target specific basins or catchments.

The High Priority Problem Areas identified for the period of this comprehensive plan are as follows:

1. Blufflands, streambanks, ravines, and erodible slopes that connect directly to a prioritized surface water feature such as the St. Croix or Mississippi River (Figures 8 and 9).
2. Groundwater recharge areas impacted by human activities, including but not limited to: draining, filling, and urban development (Figures 17 and 18).
3. Surface waters classified as impaired under section 303(d) of the Clean Water Act (Figure 4).
4. Shorelands: developed and undeveloped land adjacent to wetlands, watercourses and other prominent surface water features.
5. Areas with high-quality, intact habitat and/or areas with potential for patch-corridor reconnection.

(1) Much of the WCD’s work addresses the specific concerns, goals, and priorities of its partners, including watershed management organizations, municipalities, county government, and state agencies. Highly erodible soils on blufflands, steep slopes, and ravines that drain directly to the

Mississippi and St. Croix Rivers have been prioritized by several partners, including South Washington Watershed District (SWWD) in Part II of the District’s Watershed Management Plan (2016) and by Washington County in Chapter 6 of the 2040 Comprehensive Plan. Other plans used to support and prioritize best management practices for blufflands, ravines, and erodible slopes include the SWWD “Lower Mississippi Ravines Stormwater Retrofit Analysis” (2021), the SWWD “Trout Brook Ravines Stormwater Retrofit Analysis,” and the “MSCWMO Lake St. Croix Direct South Stormwater Retrofit Analysis” (2018). The WCD continues to work with its partners to stabilize erodible soils along the Mississippi and St. Croix Rivers to meet TMDL load reduction targets.

(2) Most of the WCD’s recent efforts to address groundwater recharge and protection to date have been concentrated in the south and central portions of the county where thin and/or highly porous soils, near near-surface bedrock, and karst features are prevalent (See Figures 8–10). Human activity in these areas can have an outsized impacts to surface and groundwater quality, which supports their designation as a High Priority Problem Area. The 2014 Washington County Groundwater Plan is the primary reference document for this Priority Problem Area. The 2014 County Groundwater Plan provides a comprehensive overview of groundwater sensitivity, impacts of human activity, pollutants of greatest concern, and actions necessary for groundwater protection in sensitive areas.

(3-4) The WCD continues to address specific TMDL load reduction targets identified by its partners. Specifically, the WCD will actively pursue implementation of practices identified in each of the completed subwatershed assessments (SWAs) listed in Appendix D, the completion of new subwatershed assessments as directed by partnering watershed management organizations, and the installation of grant-funded projects to work toward TMDL load reduction targets. Shorelands adjacent to 303(d) impaired water bodies will be prioritized based on prioritization and implementation status within existing SWAs.

(5) The WCD relies on the 2015 Minnesota State Wildlife Action Plan, Washington County 2040 Comprehensive Plan, 2012 County Top 10 Priority Conservation Areas Report, and the DRAFT Natural Resource System Framework for Washington County to guide habitat restoration and conservation initiatives. WCD habitat protection and creation activities are centered on the County's Top 10 Priority Areas and the lands adjacent. The Natural Resource System Framework, which is currently under development, will expand the County's prioritization effort by identifying (via GIS modeling supported by 2018 MLCCS data) suitable lands for conservation, protection, or enhancement.

RESOURCE ASSESSMENT

Assessment of High Priority Areas of Concern

In accordance with State Statute 103C.331, subdivision 11.9.c

"the [comprehensive] plan must identify the areas within the district where erosion, sedimentation, and related water quality problems appear most in need of control methods."

As shown above, prioritization among partnering entities is a guiding principle of WCD implementation efforts. However, prioritization efforts are always limited by the modeling resolution and motivation of the landowners. Accordingly, the WCD's approach is to prioritize to the extent practicable while remaining flexible to allow for good projects and motivated landowners to implement conservation county-wide.

The WCD relies on a variety of reports, studies, and plans completed by WCD and its partners to assess the condition and overarching trends of High Priority Problem Areas. A partial listing of these plans can be found in Appendices B-D. The following is a broad assessment of each High Priority Problem Area based on findings within the referenced plans:

(1) Gully erosion and unstable ravines carry large phosphorus loads to receiving water bodies,

particularly along the Mississippi and St. Croix Rivers where steep topography and erodible soils are common. Gully erosion has been modeled and targeted by WCD and its partners in recent years to address high TP loading to the St. Croix and Mississippi Rivers. The 2017 Trout Brook Ravines Stormwater Retrofit Analysis for SWWD and the 2018 Lake St. Croix Direct Discharge (South) Stormwater Retrofit Analysis for MSCWMO are two recent examples of guiding documents that direct WCD implementation efforts to stabilize bluffs, gullies, ravines, and streambanks based on total phosphorus contributions.

(2) Groundwater protection remains a high priority within the southern part of the county where a combination of land use, porous soils, and karst features contribute to relatively high groundwater sensitivity to pollution. Recent efforts by the WCD have targeted nitrogen fertilizer contamination within this portion of the county by introducing cover crops and new forms of perennial cover, restoring retired agricultural lands to perennial cover (e.g. prairie), diversifying crop rotations, etc. Groundwater contamination by perfluorinated alkylated substances (PFAS) remains a concern in this area as well as continued testing has revealed well contamination in the communities of Oakdale, Woodbury, St. Paul Park, Cottage Grove, Lake Elmo, West Lakeland Township, Afton, Lakeland, and Lakeland Shores. The WCD will continue to work with state and local officials to address all forms of groundwater contamination in the county and to design best management practices in accordance with MPCA and MDH requirements.

(3) Sub-watersheds with high pollutant loads and lake grade trends are a direct measure of erosion, sedimentation, and associated water quality impairments. Recent efforts by WCD and its partners have sufficiently reduced pollutant loads in seven Washington County Lakes to warrant delisting by the MPCA in 2022. These lakes include: East Boot, Echo, Hay, Big Marine (Jellums), Lily, South Twin, and Plaisted lakes. However, six water bodies were *added* to the state's impaired water list in 2022 for the presence of perfluorinated alkylated substances (PFAS). These water bodies include Tanners Lake,

Eagle Point wetland and H.J. Brown Pond, Clear Lake and the St. Croix River/Lake St. Croix from Taylors Falls to Prescott. Chloride contamination is also a growing concern within Washington County with Long Lake in Stillwater being added to the state's list of impaired water bodies for chloride. Other water bodies currently listed for chloride impairment include Tanners, Carver, and Battle Creek lakes.

(4) Shoreland erosion has been prioritized by several WCD partners to address phosphorus loading to waterbodies that are currently listed as impaired for excess nutrients and/or TSS. These water bodies include: Benz, Barker, Big Marine (Jellums), Bone, Downs, East Boot, Fish, Goose, Hay, Lily, Long, Louise, Lynch, Mud, Plaisted, Shields, South School Section, South Twin, and Sunfish lakes along with both the St. Croix and Mississippi rivers. Of these water bodies, Big Marine (Jellums), East Boot, Echo, Hay, Lily, Plaisted, and South Twin lakes are slated to be delisted in 2022 for excess nutrients.

(5) The WCD works with the county, local watershed management organizations, municipalities, and non-profit organizations to protect and restore areas of high-quality habitat throughout the county. The WCD helps negotiate new forms of land protection through the Washington County Land & Water Legacy Program by developing habitat management plans that supplement conservation easements. WCD staff are also working with the county to develop a "Natural Resource System Framework" to help guide landscape stewardship and protection efforts within the County. This work is informed by the county's Top 10 Priority Conservation Areas and the state's 2015-2015 State Wildlife Action Plan, which identifies "Conservation Focus Areas (CFA's)" for the state based on opportunities for partnerships centered on habitat restoration or conservation.

Conservation Measures

The following broad conservation measures have been identified to address high priority areas of concern:

Conservation Measure 1: Assessing and maintaining existing conservation practices—

WCD monitors and maintains existing best management practices (BMP's) to maximize longevity, efficacy, and efficiency. Monitoring and maintenance should continue and expand to assess the functional performance of multiple practice categories in both rural and urban landscape contexts.

Conservation Measure 2: Protecting and restoring groundwater recharge—

Loss of wetlands, landscape alterations, and urban development has reduced the capacity of the landscape to infiltrate and recharge groundwater. Wetland restoration, conservation, and recharge area protection remain high priorities, particularly where infiltration potential is high and risk of groundwater contamination is low.

Conservation Measure 3: Controlling and minimizing erosion to tolerable levels—

Steep bluffs and erodible soils are common along the St. Croix and Mississippi River. Shorelines and streambanks are destabilized by human-induced factors. Wind and water erosion continue to be a significant issue. Ongoing prioritization work should continue to identify areas at risk for worsening erosion and slope destabilization, followed by implementation of soil stabilization measures.

Conservation Measure 4: Restoring natural hydrology (flow and quality)—

Landscape and/or site-scale practices such as restoration, turf conversion, and bioretention restore natural hydrology, reduce runoff, increase resilience, and improve water quality.

Conservation Measure 5: Restoring and reconnecting natural habitats—

Past GIS mapping initiatives have identified intact high-quality habitat patches, corridors, and opportunities for reconnection and/or expansion throughout the county. Targeted restoration efforts have the potential to maximize benefit to wildlife by prioritizing connections to existing habitats and restoring ecosystems. Connecting these measures

with long-term protection and management maximize their effectiveness.

Conservation Measure 6: Raising awareness and providing outreach—

Full-time education and outreach staff at WCD coordinate with other SWCD's, local government units (LGU's), watershed management organizations (WMO's), and other partners to educate the public about natural resources conservation practices. Education and outreach initiatives should continue to expand in order to develop shared understanding of contemporary challenges to land and water conservation.

Effectiveness of Past Efforts

Strengths of past efforts: The WCD has a long history of collaboration with local partners to implement share conservation goals. Through these partnerships and WCD initiative, the WCD has developed a robust education and technical assistance program to facilitate access to county-funded technical assistance, watershed cost-share programs, design and install grant-funded projects. The WCD provides direct outreach to landowners through the East Metro Water Education Program (EMWREP), a nationally recognized collaboration of over 20 local units of government. Technical assistance from concept to installation is provided by a team of design professionals who support Federal, State, County, and local conservation programs in urban and rural environments. Through these programs, the WCD has installed over 266 best management practices on both public and private land since 2016 and engaged over 6,000 residents through site visits, workshops, events, and other educational programs. The WCD also coordinates an in-house BMP maintenance program, which conducts over 250 BMP inspections annually and performs routine maintenance on over 170 projects installed through watershed district cost-share programs. The WCD erosion control inspection program has also developed to inspect (as of 2021) over 750 sites annually to ensure compliance with state & local permit requirements. The WCD water monitoring program conducts sampling and analysis

of water quality on over 65 lakes and 30 streams in Washington County on an annual basis; the program also assesses water elevation on over 115 basins annually (2020 site numbers). Together, these programs drive and support an adaptive management approach to modeling and surveying, BMP implementation, monitoring, and maintenance.

Weaknesses of past efforts: Limited and lack of direct, reliable funding to WCDs for implementation of county-wide initiatives hampers our efforts. The BMP database software that the WCD utilized in the past was ineffective at efficiently tracking and summarizing BMP performance, particularly for older practices. The new ArcGIS Online platform that the WCD has moved to will make BMP installation, maintenance, and performance tracking more reliable and accessible in the future. The new database can now be readily accessed online by WCD partners and the general public.

GOALS, STRATEGIES, AND ACTIONS

This section provides an overview of the framework used to describe the goals, strategies, and actions of the WCD Comprehensive Plan. Each of the WCD's Goals will have multiple strategies, actions, and measures.

Example Plan Framework:

- I. **GOALS: Goals are overarching priorities for the WCD to achieve our mission.**
 - A. **Strategy**—Strategies are broad approaches that frame how the WCD will achieve our goals. Strategies follow the Adaptive Implementation framework of: Planning and Prioritization, Education, Technical Assistance and Implementation, and Performance Assessment.
 1. **Action**—Actions are non-exhaustive examples of the day-to-day project and program work needed to implement these strategies. Additional Actions will be identified based on monitoring, modeling, funding availability, new resource concerns, and landowner feedback.

The WCD's four goals and their associated strategies and actions drive our conservation work.

- I. GOAL I: PROTECT AND IMPROVE SURFACE WATER QUALITY.
- II. GOAL II: CONSERVE GROUNDWATER, PROTECT GROUNDWATER QUALITY, AND ENHANCE GROUNDWATER RECHARGE.
- III. GOAL III: PROTECT, ENHANCE, AND RESTORE TERRESTRIAL AND AQUATIC HABITAT.
- IV. GOAL IV: SUPPORT AND CREATE ECONOMICALLY VIABLE SUSTAINABLE LANDSCAPES.

While working to achieve these Goals, the WCD will strive to maintain an effective and responsive conservation district by adhering to the Guiding Principles. As this Plan is part of an adaptive implementation approach, modifications and/or additions to the *Actions* identified below are anticipated.



GOAL I: Protect and Improve Surface Water Quality.

- A. **Strategy**—Planning and Prioritization: Promote conservation through technical review and comments, regional and state planning and local natural resource planning. Prioritize and target implementation.
 - 1. **Action**—Complete sub-watershed analyses (SWA) for priority water bodies.
 - 2. **Action**—Work with land use decision makers to improve programs, ordinances, and rules for surface water, groundwater, wetland, and upland habitat protection/enhancement.
- B. **Strategy**—Monitoring: Inspection and monitoring. Measure conditions of water resources and verify land use and BMPs in their watershed.

- 1. **Action**—Implement baseline water monitoring program.
- 2. **Action**—Implement targeted water monitoring.
- C. **Strategy**—Education: Provide an education program that makes new contacts, fosters partnerships and engages the public and local governments in surface water resources protection.
 - 1. **Action**—Implement East Metro Water Resource Education Program (EMWREP).
- D. **Strategy**—Technical Assistance and Implementation: Design, installation, and maintenance. Implement conservation through experience technical expertise.
 - 1. **Action**—Continue to enhance cost-share and voluntary incentive program for innovative stormwater management. Work with watershed organizations to develop Best Management Practice (BMP) programs countywide.
 - 2. **Action**—Promote Low Impact Development (LID) through demonstration sites, cost-share program, ordinance enhancement, watershed planning, and educational activities.
 - 3. **Action**—Implement stormwater management retrofit program.
 - 4. **Action**—Pursue field applied research opportunities to enhance the long-term performance of water quality practices at multiple scales.
- E. **Strategy**—Performance Assessment: Design, install, and perform performance assessment at BMP and catchment scales to determine effectiveness and refine approaches.
 - 1. **Action**—Implement sediment control and regular inspection of active construction sites for protection of water quality.

- F. **Strategy**—Maintenance: Ensure long-term effectiveness of BMPs through regular inspections and maintenance.
 1. **Action**—Expand BMP maintenance and inspections program through improved mapping and database management capability.

II **GOAL II: Conserve Groundwater, Protect Groundwater Quality, and Enhance Groundwater Recharge.**

- A. **Strategy**—Planning and Prioritization: Work with partners to identify WCD services needed for managing county groundwater resources.
 1. **Action**—Strengthen partnerships with local government units (LGU’s) and other entities to protect sensitive groundwater-dependent resources and recharge areas.
 2. **Action**—Join and participate in local and regional groundwater advisory committees.
 3. **Action**—Collaborate with DNR and County to ensure proper water appropriation management.
 4. **Action**—Partner with County and watersheds to implement groundwater protection strategies (proper ISTS installation, recharge area protection, stormwater infiltration, etc.). Use groundwater models during plan review process.
- B. **Strategy**—Monitoring: Monitor sites for chemical and biological factors and groundwater levels. Including cold water streams for base-flow.
 1. **Action**—Implement baseline water monitoring program.
 2. **Action**—Implement targeted water monitoring.
- C. **Strategy**—Education: Provide an education program that makes new contacts, fosters partnerships, and engages the public and local

governments in groundwater water resources protection.

1. **Action**—Provide training new staff to ensure high level of expertise in-house.
- D. **Strategy**—Education: Engage the public and local governments to conserve groundwater through actions and practices.
 1. **Action**—Develop new outreach materials with a focus on equity and accessibility.
 - E. **Strategy**—Technical Assistance (TA) and Implementation: Identify and provide TA for implementation of BMPs that promote infiltration and recharge, capture and reuse, and reduce demand for groundwater resources.
 1. **Action**—Coordinate with education staff to develop new education materials and targeted outreach campaigns to generate interest.
 2. **Action**—Maintain an active database to track outreach and engagement metrics.
 - F. **Strategy**—Performance Assessment and Maintenance: Design, install, and carry out Performance Assessment at BMP and catchment scales to determine effectiveness and refine approaches.
 1. **Action**—Enhance cross-collaboration between BMP design staff and BMP maintenance program.
 2. **Action**—Measure and track BMP performance through measurable criteria such as: infiltration rate, phosphorus and sediment load capture, maintenance cost, etc.

III **GOAL III: Protect, Enhance, and Restore Terrestrial and Aquatic Habitat.**

- A. **Strategy**—Planning and Prioritization: Work with Local and State partners to protect and aid

in the recovery of Endangered, Threatened, and Special Concern species.

1. **Action**—*Prioritize land protection, restoration, and habitat enhancement activities in areas of the county with high potential for at-risk species, including state and federally-listed species, and Species in Greatest Conservation Need (SGCN).*
2. **Action**—*Utilize State and County prioritization tools (Such as the MN State Wildlife Action Plan and Washington County Landscape Stewardship & Protection Framework) to guide WCD activities for at-risk species protection.*

B. **Strategy**—Planning and Prioritization: Continue to identify lands and waters at greatest risk from pressures such as land use change, pollution, groundwater sensitivity, climate change and invasive species.

1. **Action**—*Promote proper shoreline buffer and vegetation management. Integrate with tree program, BMP programs, easements, invasive weed control, and noxious weed control.*
2. **Action**—*Promote and support Comprehensive Wetland Management Plans.*

C. **Strategy**—Continue to identify lands and waters that provide greatest benefits to surface and groundwater protection, climate resiliency, pollinators, habitat corridors, carbon storage, rare plants populations, and Species of Greatest Conservation Need.

1. **Action**—*Promote and support County and DNR Greenway programs. Assist with local implementation of easement and land protection programs.*
2. **Action**—*Promote urban/suburban tree program. Investigate opportunities to provide incentives and discounted trees through partnerships with nurseries and others.*

D. **Strategy**—Planning and Prioritization: Set priorities for protecting and managing resources under greatest threat and of greatest benefit. Identify funding sources for protection, habitat restoration, and rare and invasive plant mapping.

1. **Action**—*Leverage existing partnerships to identify opportunities for funding acquisition.*

E. **Strategy**—Monitoring: Monitor the establishment of restoration projects and develop best practices for the design, implementation and manage of various habitats types. Work with scientists to identify the water quality benefits for restoration projects such as buckthorn removal.

1. **Action**—*Coordinate with state and academic partners to develop monitoring protocols and assessment criteria.*
2. **Action**—*Update land protection mapping regularly and conduct site reviews for higher quality areas.*

F. **Strategy**—Monitoring: Monitor the distribution of established terrestrial invasive populations as well as the movement of early detection-rapid response invasive species in the region that will likely become established.

1. **Action**—*Continue to cooperate with state agencies and LGU's to develop online reporting/tracking initiatives such as EddMaps and ISMTrack.*
2. **Action**—*Coordinate invasive species mapping, tracking and management efforts with State and local government agencies, local and regional conservation organizations.*

G. **Strategy**—Education: Compile and disseminate up-to-date technique and strategies for the habitat restoration and management.

1. **Action**—*Share information and offer support to partners through open platforms such as the Cooperative Weed Management Area (CWMA)*

Program, Society for Ecological Restoration (SER), County-level consortiums, and other platforms.

H. **Strategy**—Education: Develop cooperatives to natural resource management activities such as prescribed burning, grazing, invasive species management, and timber stand management.

1. **Action**—*Research existing cooperatives in other counties and develop a cooperatives model for future implementation.*

I. **Strategy**—Technical Assistance and Implementation: Provide technical assistance for the design and implementation of habitat restoration projects. Continue to develop Habitat Management Plans for LGU's and non-profits as a component of their land protection programs. Support the implementation of these plans with assistance in grant applications.

1. **Action**—*Complete and update countywide land cover mapping using the Minnesota Land Cover Classification System to track land use change.*

2. **Action**—*Assist in the development of habitat management plans for local governments, non-profit organizations, and homeowners.*

J. **Strategy**—Implementation: Promote and provide cost-share to restore native habitats.

1. **Action**—*Continue to assist landowners in managing and restoring private property by providing technical assistance and connecting landowners to relevant cost-share funding.*

K. **Strategy**— Implementation: Create and improve habitat for pollinators and other wildlife by habitat conversion and enhancement of existing habitat.

1. **Action**—*Eradicate existing invasive species populations, prevent the spread of existing populations of invasive species, and avoid the establishment of future invasive species.*

L. **Strategy**—Performance assessment: evaluate efficacy of in-place programs, projects, and practices.

1. **Action**—*Utilize Adaptive Management framework to measure and assess existing initiative by measurable criteria such as: vegetative cover and composition, water quality, net carbon footprint or sequestration, species inventories, cost/benefit analyses, etc.*

M. **Strategy**—Maintenance: Ensure long-term effectiveness of BMPs and habitat restoration/enhancement projects.

1. **Action**—*Work with the County and local units of government to ensure conservation easement areas are effectively managed and maintained.*

2. **Action**—*Work with the County to update and revise existing Integrated Pest Management (IPM) plans and protocols.*

IV GOAL IV: Support and Create Economically Viable, Sustainable, and Resilient Landscapes.

A. **Strategy**—Planning and Prioritization: Maintain and expand partnerships for collaboration in sustainable agriculture techniques, the establishment of a green infrastructure program, the identification of funding sources, and the development of local food systems.

1. **Action**—*Synchronize WCD, Natural Resource Conservation Service (NRCS), and watershed programs to maximize local, state and federal funds to implement agricultural conservation practices. Strive to ensure all agricultural lands have Tolerable soil losses. Work with watersheds to implement agricultural BMPs.*

2. **Action**—*Develop comprehensive pollinator habitat protection program to maximize habitat on non-working and working lands.*

3. **Action**—Continue to refine and update the working lands prioritization completed in the Natural Resource System Framework. Include opportunities for large-scale wetland restoration and buffer enhancement and creation.

continued development of new markets for nontraditional crops, incentive and insurance programs for farmers, and co-ops or other community wealth-building networks and enterprises to anchor local food systems.
- B. **Strategy**—Planning and Prioritization: Identify and promote conservation-friendly revenue generation alternatives for landowners and occupiers.
 1. **Action**—Collaborate with and support key partners in continued development of new markets for nontraditional crops, such as perennial grains and collaborate with state agencies, local organizations, and farmers to develop and support co-ops or other community wealth-building networks and enterprises to anchor local food systems.
- C. **Strategy**—Planning and Prioritization: Minimize net carbon footprint and identify opportunities for carbon sequestration.
 1. **Action**—Utilize state and regional tools to measure and mitigate the net carbon footprint of WCD-led projects.
 2. **Action**—Utilize Washington County Land & Water prioritization to increase land protection for carbon sequestration potential.
- D. **Strategy**—Planning and Prioritization: Develop and support innovations that improve and sustain landscape resiliency
 1. **Action**—Utilize Washington County Land & Water prioritization to protect high-quality native habitat in key corridors, enhance corridor connections, and restore habitat on prioritized lands.
 2. **Action**—Collaborate with partners to expand existing programs and develop new local programs to encourage local renewable energy production efforts.
 3. **Action**—Support regenerative food systems by supporting key partners in
 1. **Action**—Utilize, update, and maintain industry-standard software, data sets, and protocols.
- E. **Strategy**—Monitoring: Use modeling and targeted monitoring to determine changes in pollutant loads from conservation practices as well as enhancing input parameters for predictive models.
 1. **Action**—Reach out to and collaborate with academic faculty to identify areas for future research.
- F. **Strategy**—Monitoring/research: Work with a team of researchers to determine the ecological services provided through various practices.
 1. **Action**—Reach out to and collaborate with academic faculty to identify areas for future research.
- G. **Strategy**—Education: Build awareness within the community of sustainable agriculture programs and sustainable landscapes.
 1. **Action**—Provide outreach for landowners in the priority areas of potential practices leading to a more sustainable landscape. Connect people to nature through County Park stewardship programs such as conservation-based grazing, firewood collection, timber production, wild plant, mushroom, and berry gathering and hunting.
 2. **Action**—Promote proper pasture management, irrigation techniques, and nutrient management.
- H. **Strategy**—Technical Assistance and Implementation: Regionally promote and incentivize sustainable working lands that provide multiple benefits. Local food (food security).
 1. **Action**—Enhance County-owned cropland management program and aid in the transition from cropland to native

prairie or the movement towards perennial crop systems.

2. **Action**—*Provide site visits with landowners in the priority areas to nurture those relationships promote sustainable practices.*

- I. **Strategy**—Technical Assistance and Implementation: Assist in the implementation of practices to promote sustainable landscapes.

1. **Action**—*Implement and promote a native vegetated buffer program to protect water quality and provide habitat.*
2. **Action**—*Work with agricultural producers to promote resource-sensitive drainage management and promote natural stream management. Integrate with Comprehensive Wetland Management Plans and Wetland Conservation Act (WCA).*
3. **Action**—*Develop a local program similar to the Conservation Reserve Program to convert row crops to native habitats, especially in the highest priority areas.*

- J. **Strategy**—Performance assessment:

1. **Action**—*Collect and track socioeconomic data in order to assess social impact of projects and practices.*

IMPLEMENTATION

Workload Analysis

The WCD currently employs 17 Full Time Equivalent (FTEs). The following workload estimate is provided for each of the Goals listed above and to carry-out

the listed strategies and actions. Each objective lists estimated workload based on staff years over the 10-year life of this Plan.

Goal I: Protect and improve surface water quality: 8 FTE.

Goal II: Conserve groundwater, protect groundwater quality, and enhance groundwater recharge: 2.0 FTE.

Goal III: Protect, enhance, and restore terrestrial and aquatic habitat: 2.0 FTE.

Goal IV: support and create economically viable sustainable landscapes. 2.0 FTE.

Further, up to 3.5 FTE are anticipated to support WCD and partner organizations and their administrative and program support.

Maintaining existing FTEs and addressing the need for the additional FTE over the next 10 years will depend on available state funding and the ability to partner with Washington County, local watershed management organizations and local communities.

Budget Forecast

Appendix E provides a budget forecast over the next 5 years. The budget forecast is based on the assumption that all current funding is maintained with slight annual increases and all current partnerships continue to be embraced into the future.

APPENDIX

APPENDIX A –POLICIES

<u>Policy</u>	<u>Frequency Considered</u>
Employee COLA and Merit Increases	Annually
Employee Handbook	As needed
Fee Schedule	Annually
State Cost-Share Policies	Annually
Identification of Financial Institution and Paper	As needed
Delegation of WCA decisions to staff	As needed
Pandemic Policies	As needed

APPENDIX B – RESOLUTION

Resolution to Adopt the Lower St. Croix Comprehensive Watershed Management Plan and Enter Into a Joint Powers Agreement for the Implementation of the Lower St. Croix Comprehensive Watershed Management Plan

WHEREAS, the Washington Conservation District (WCD) entered into the Lower St. Croix Watershed (LSCW) Memorandum of Agreement as a collaborative partner with 14 other political subdivisions and watershed management organizations to develop a comprehensive watershed management plan for the LSCW and the collaborative submitted a draft Lower St. Croix Comprehensive Watershed Management Plan (LSCCWMP) to the Minnesota Board of Soil and Water Resources (BSWR) for State approval.

WHEREAS, on October 28, 2020, BWSR announced its approval of the LSCCWMP, requiring the governing boards of the partnering organizations to make additional authorizations and approvals to move forward the important work of implementing Lower St. Croix Comprehensive Watershed Management Plan.

NOW, THEREFORE, BE IT RESOLVED that the WCD Board hereby adopts the LSCCWMP and such plan shall supplement the WCD Comprehensive Plan SWCD purposes for the area of Washington County identified within the LSCCWMP.

BE IT FURTHER RESOLVED that the WCD Board authorizes the implementation of the LSCCWMP for the area of Washington County identified within said plan and directs the WCD Manager to administer the implementation of such portion of the plan on behalf of WCD.

BE IT FURTHER RESOLVED that, pursuant to Minnesota Statute Section 471.59, the WCD Board authorizes and agrees to enter into the Joint Powers Agreement, attached hereto and incorporated herein, for the collaborative implementation of the LSCCWMP.

BE IT FURTHER RESOLVED that, pursuant to the terms of said Joint Powers Agreement, the WCD Board will annually appoint a standing representative and alternate representative of the WCD Board to serve on the Policy Committee as provided in the Joint Powers Agreement.

BE IT FURTHER RESOLVED that the WCD Board authorizes and directs the WCD Manager to carry-out all duties and obligations required of WCD under the Joint Powers Agreement, including, but not limited to, designating WCD staff to serve on the Advisory Committee under the Joint Powers Agreement.

BE IT FURTHER RESOLVED that the WCD authorizes the WCD to serve as the initial Administrative Coordinator in coordination with the Chisago SWCD and directs the WCD Manager and delegated staff to carry out all functions under relevant agreements.

Adopted: 10th of November, 2020. Revised 16th of March, 2022.

APPENDIX C – WASHINGTON COUNTY WATERSHED MANAGEMENT ORGANIZATIONS & COMPREHENSIVE PLANS

*Includes links to each watershed management organization’s 10-year comprehensive plan.

- [Brown’s Creek Watershed District](#) (BCWD) Comprehensive Watershed Management Plan
- [Carnelian Marine St. Croix Watershed District](#) (CMSCWD) Comprehensive Watershed Management Plan
- [Comfort Lake-Forest Lake Watershed District](#) (CLFLWD) Comprehensive Watershed Management Plan
- [Middle St. Croix Watershed Management Organization](#) (MSCWMO) Comprehensive Watershed Management Plan
- [Ramsey Washington Watershed District](#) (RWMWD) Comprehensive Watershed Management Plan
- [Rice Creek Watershed District](#) (RCWD) Comprehensive Watershed Management Plan
- [South Washington Watershed District](#) (SWWD) Comprehensive Watershed Management Plan
- [Valley Branch Watershed District](#) (VBWD) Comprehensive Watershed Management Plan

APPENDIX D – REFERENCE PLANS and SWAs

In addition to the watershed management organization comprehensive plans above, the WCD shall reference and utilize the most up-to-date versions of the following plans to further support and guide conservation strategies and actions:

- [Washington County 2040 Comprehensive Plan](#) (2019)
- [Washington County Groundwater Plan](#) (2014)
- Washington County Land and Water Legacy Program
- Washington County Natural Resource System Framework (in process)
- [MN Wildlife Action Plan \(WAP\) 2015-2025](#)
- [St. Croix TMDL Implementation Plan](#) (2013)
- Additional TMDL Implementation Plans (Below)

APPENDIX E – SUBWATERSHED ASSESSMENTS

- CLFLWD Forest Lake North Stormwater Retrofit Analysis (2016)
- CLFLWD Forest Lake South Direct Stormwater Retrofit Analysis (2014)
- CLFLWD Bone Lake Subwatershed Assessment (2017)
- CMSCWD 6 Lakes Subwatershed Assessment (2020)
- MSCWMO Lake St. Croix Direct North (2014)
- MSCWMO Lily Lake Stormwater Retrofit Assessment (2010)
- MSCWMO Lake McKusick Stormwater Retrofit Assessment (2010)

- MSCWMO Perro Creek Stormwater Retrofit Analysis (2014)
- MSCWMO Lake St. Croix Direct South (2018)
- RCWD Southeast White Bear Lake (2017)
- RWMWD Carver Lake Subwatershed Infiltration Study (2008)
- SWWD Colby Lake Stormwater Retrofit Assessment (2011)
- SWWD Highway 61 Commercial Stormwater Retrofit Assessment (2010)
- SWWD Powers Lake Stormwater Retrofit Assessment (2010)
- SWWD Trout Brook Ravines Stormwater Retrofit Analysis (2017)
- SWWD Wilmes Lake Stormwater Retrofit Analysis (2014)
- SWWD Armstrong-Markgrafs Lakes Subwatershed Retrofit Analysis (2014)
- SWWD Lower Mississippi Ravines Subwatershed Retrofit Analysis (2021)
- VBWD lake DeMontreville Stormwater Retrofit Assessment (2011)

APPENDIX F – TMDL IMPLEMENTATION PLANS

- [Upper Mississippi River TSS TMDL](#) (December 2020)
- [RCWD Lower Rice Creek Sediment Study and Plan](#) (June 2018)
- [Ramsey-Washington Metro WD](#) (September 2017)
- [South Metro Mississippi River TMDL \(Metro\)](#) (April 2016)
- [Twin Cities Metro Area Chloride TMDL](#) (June 2016)
- [Southwest Urban Lakes Nutrient TMDL](#) (February 2015)
- [Upper Mississippi River Bacteria TMDL](#) (November 2014)
- [Bald Eagle Lake Nutrient TMDL](#) (June 2012)
- [Kohlman Lakes: Excess Nutrients \(Metro\)](#) (March 2010)
- [Golden Lake Nutrient TMDL](#) (September 2009)
- [Hardwood Creek Biota TMDL](#) (June 2009)

APPENDIX G – BUDGET FORECAST

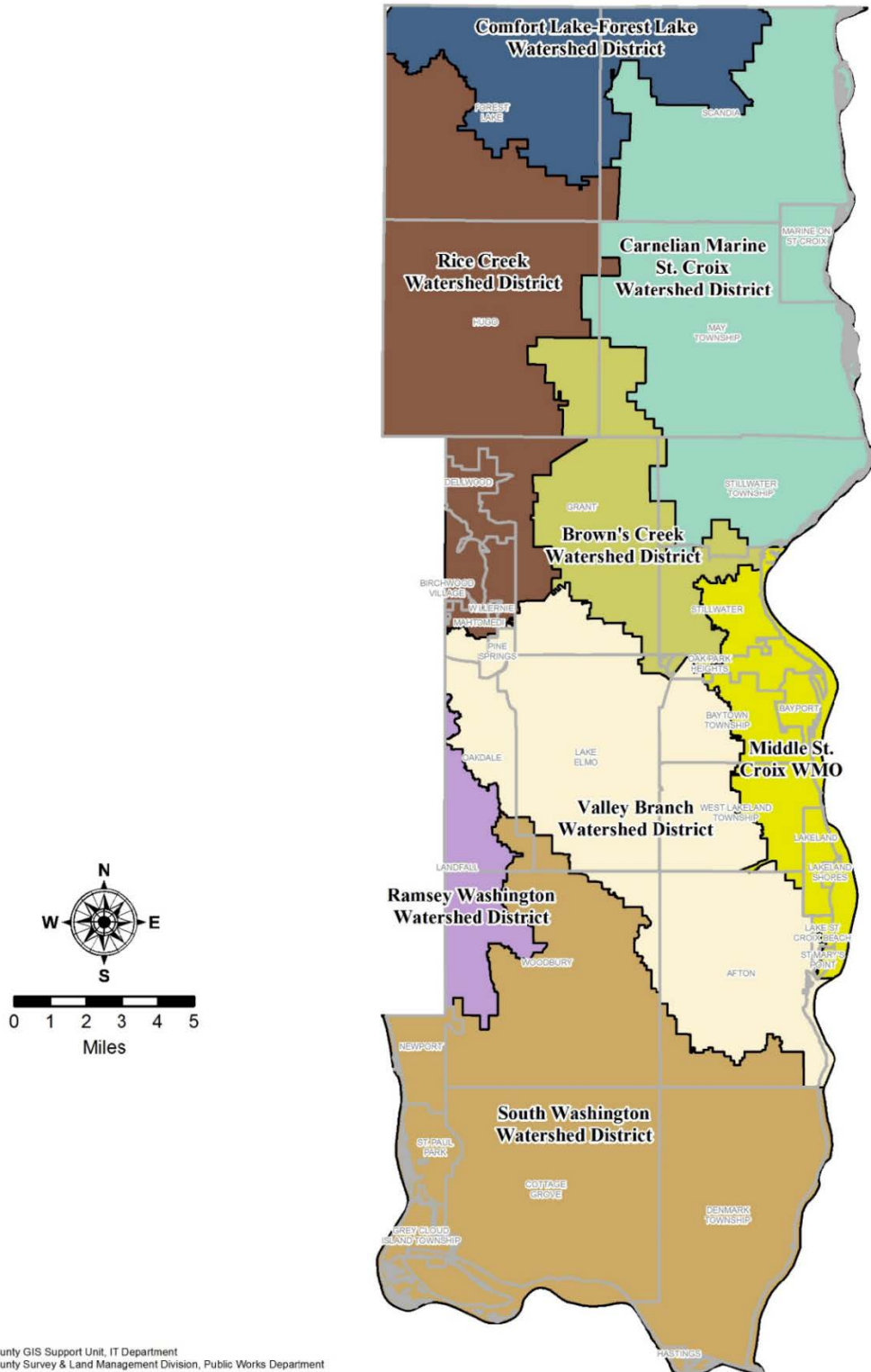
	FY22	FY23	FY24	FY25	FY26	FY27
Revenues						
State						
Base Grant and TA	\$299,000.00	\$399,000.00	\$399,000.00	\$399,000.00	\$399,000.00	\$399,000.00
Grants						
County	\$528,000.00	\$549,120.00	\$571,084.80	\$593,928.19	\$617,685.32	\$642,392.73
Local	\$1,789,560.43	\$1,861,142.85	\$1,935,588.56	\$2,013,012.10	\$2,093,532.59	\$2,177,273.89
Total Revenue	\$2,616,560.43	\$2,809,262.85	\$2,905,673.36	\$3,005,940.30	\$3,110,217.91	\$3,218,666.62
Expenditures						
Operations						
Personnel	\$1,855,800.00	\$1,930,032.00	\$2,007,233.28	\$2,087,522.61	\$2,171,023.52	\$2,257,864.46
Office and Supplies	\$381,150.00	\$396,396.00	\$412,251.84	\$428,741.91	\$445,891.59	\$463,727.25
Capitol Outlay		\$50,000.00	\$50,000.00			\$25,000.00
Projects						
District	\$296,309.00	\$308,161.36	\$320,487.81	\$333,307.33	\$346,639.62	\$360,505.20
State	\$35,000.00	\$36,400.00	\$37,856.00	\$89,370.00	\$92,944.80	\$69,708.60
Total Expenditures	\$2,568,259.00	\$2,720,989.36	\$2,827,828.93	\$2,938,941.85	\$3,056,499.53	\$3,176,805.51

APPENDIX H – LIST OF FIGURES

FIGURE 1. Supervisor Districts



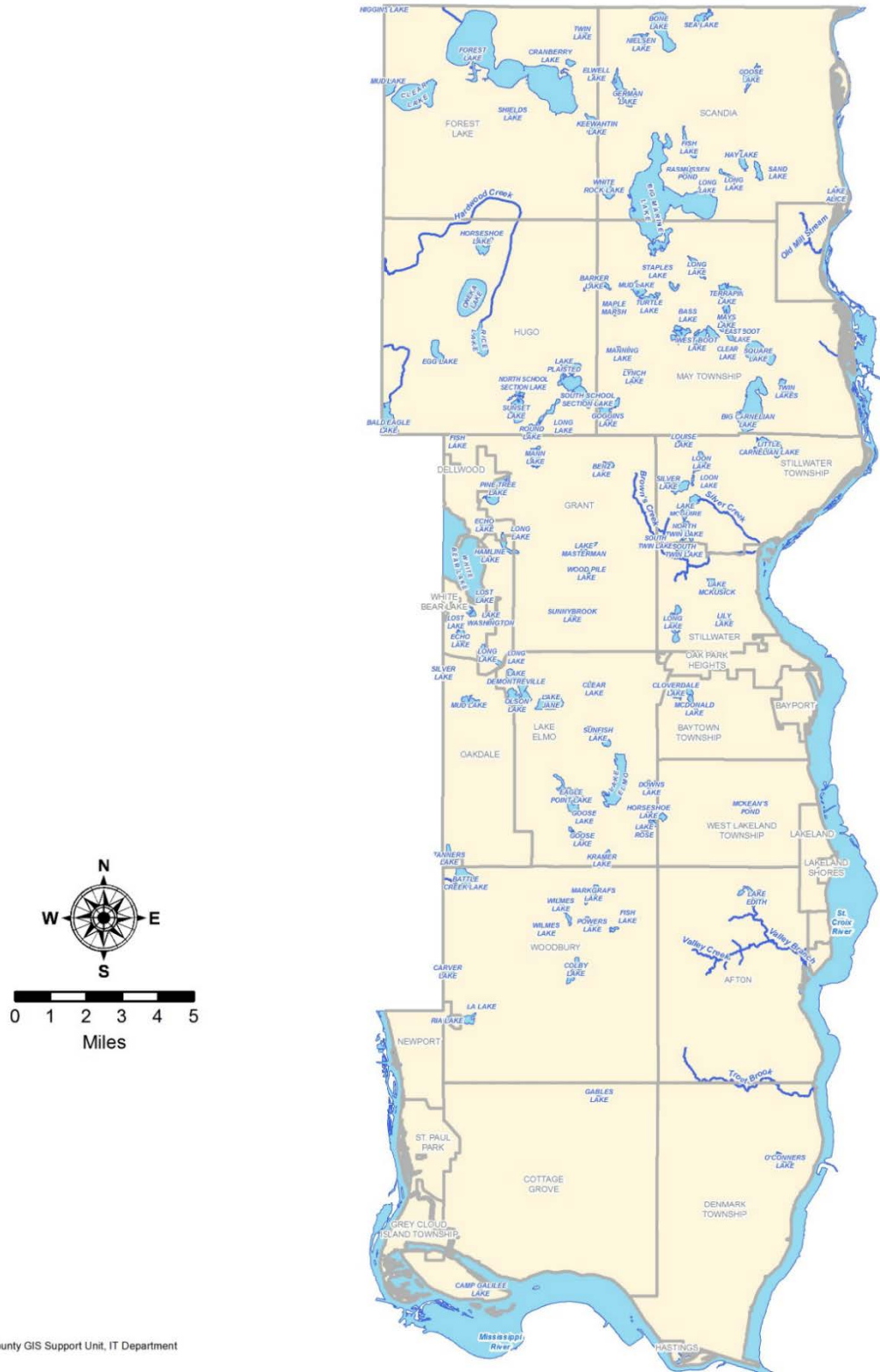
FIGURE 2. Watershed Management Organizations



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Survey & Land Management Division, Public Works Department

**Source: Washington County 2040 Comprehensive Plan

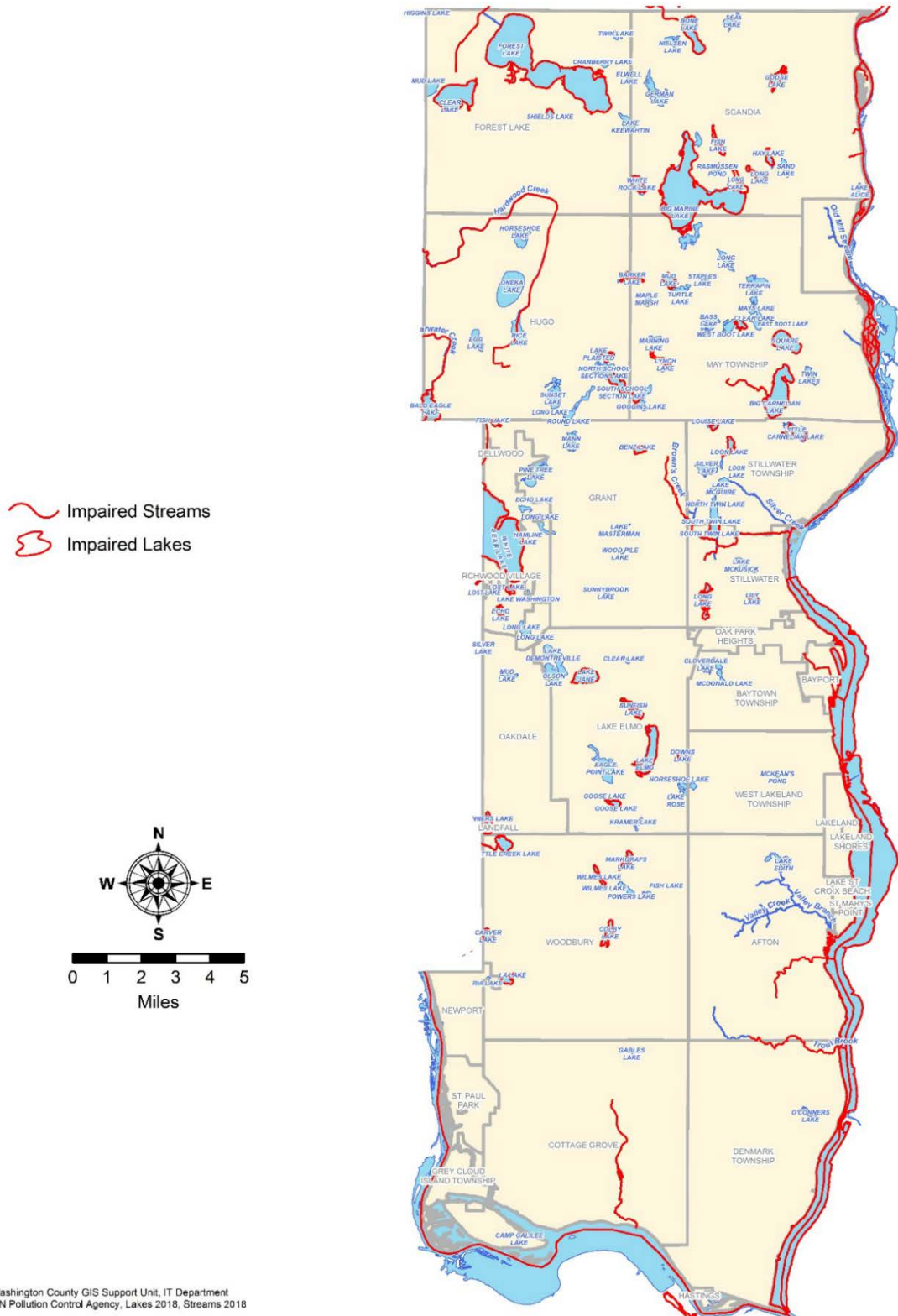
FIGURE 3. Major Surface Water Bodies



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: MN DNR

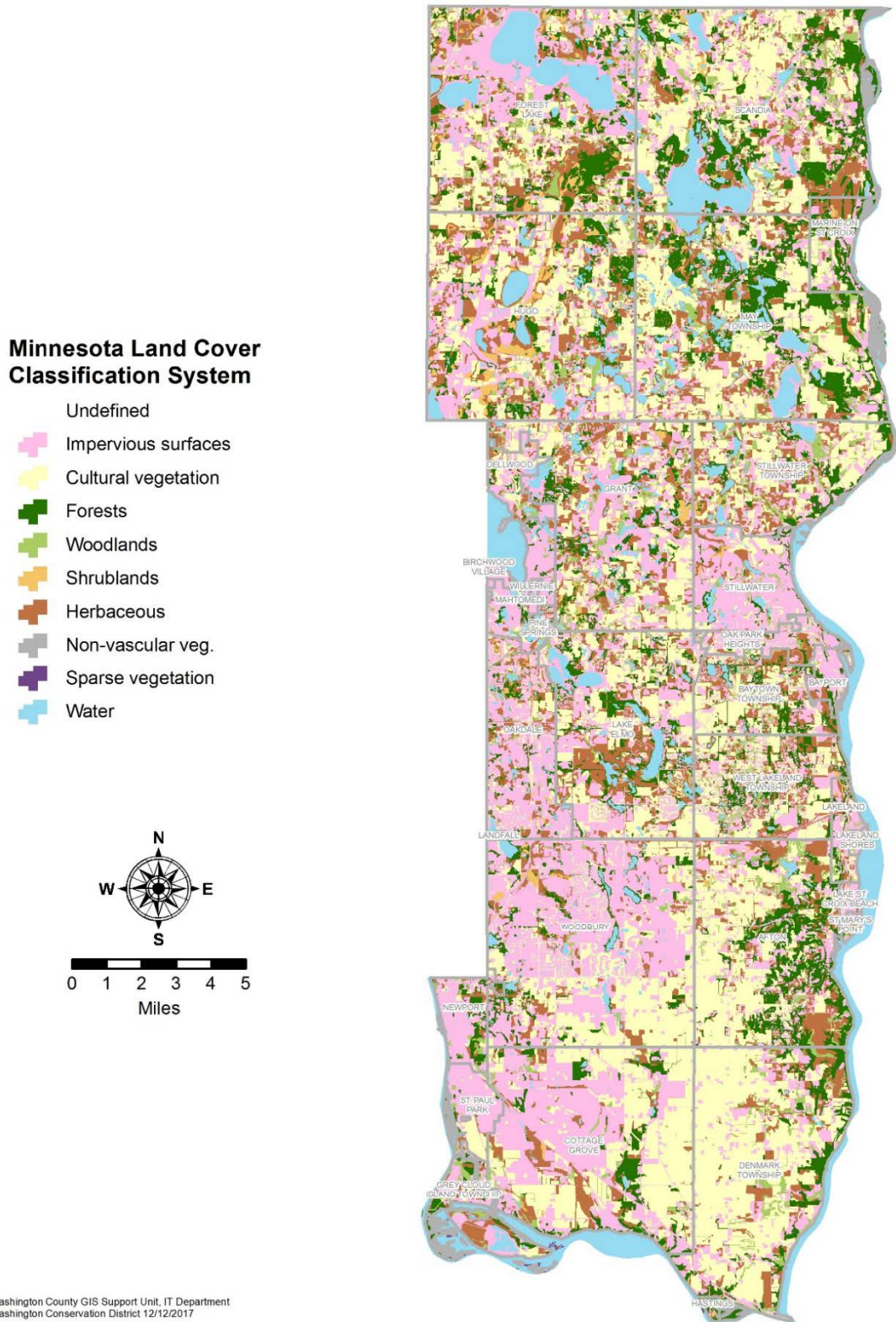
**Source: Washington County 2040 Comprehensive Plan

FIGURE 4. Impaired Water Bodies



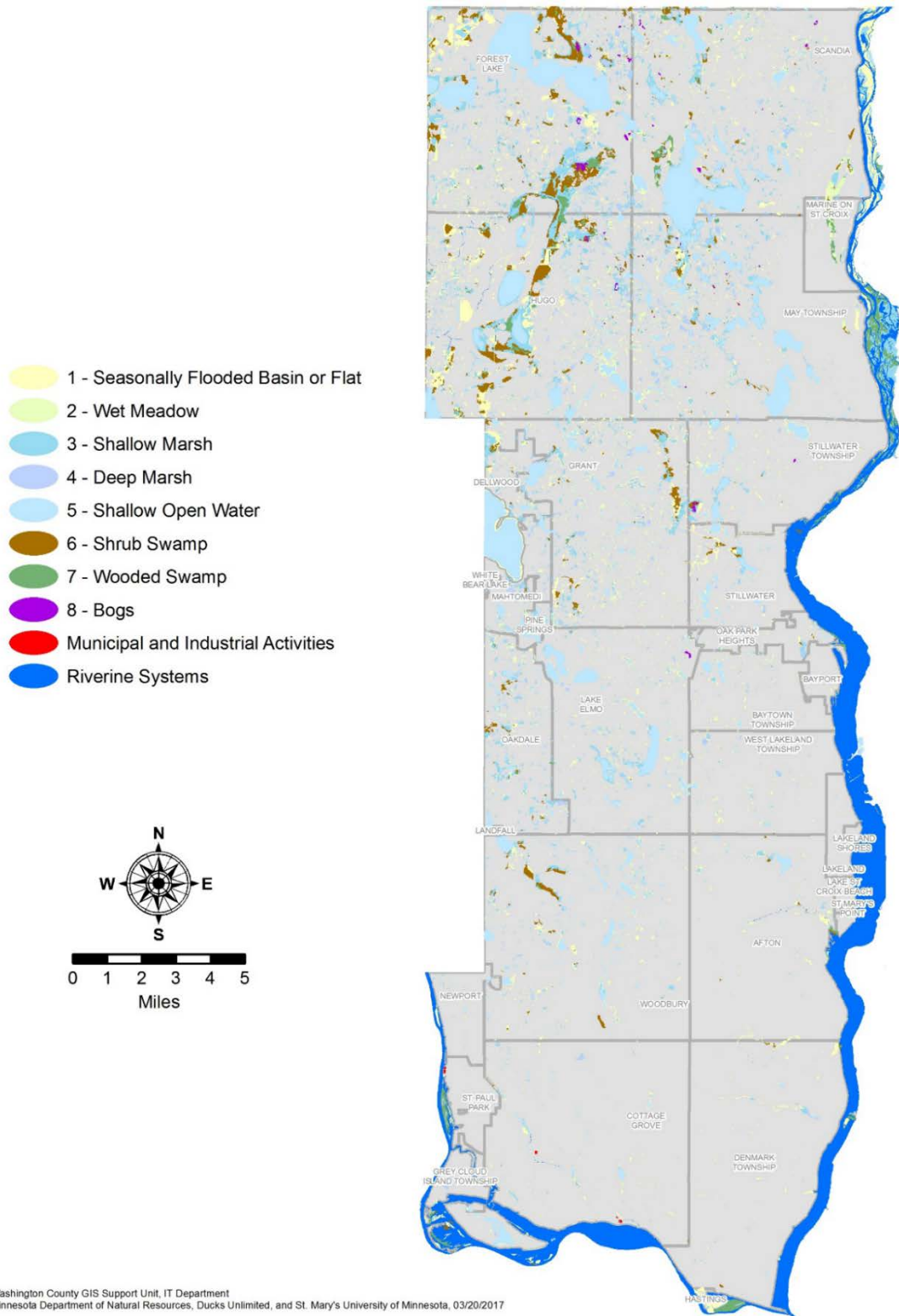
**Source: Washington County 2040 Comprehensive Plan

FIGURE 5. 2016 MLCCS



**Source: Washington County 2040 Comprehensive Plan

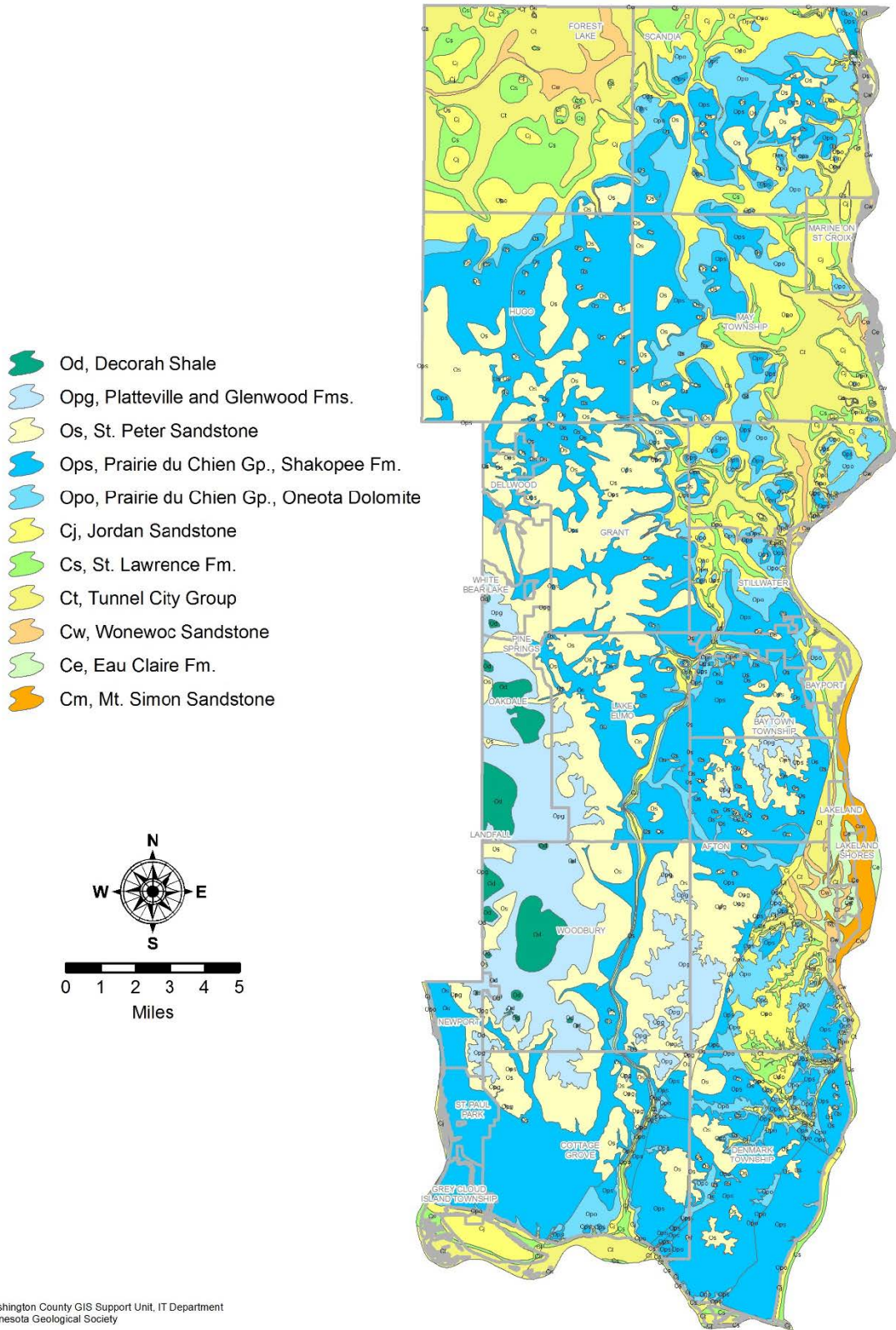
FIGURE 6. Washington County Wetlands



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Minnesota Department of Natural Resources, Ducks Unlimited, and St. Mary's University of Minnesota, 03/20/2017

**Source: Washington County 2040 Comprehensive Plan

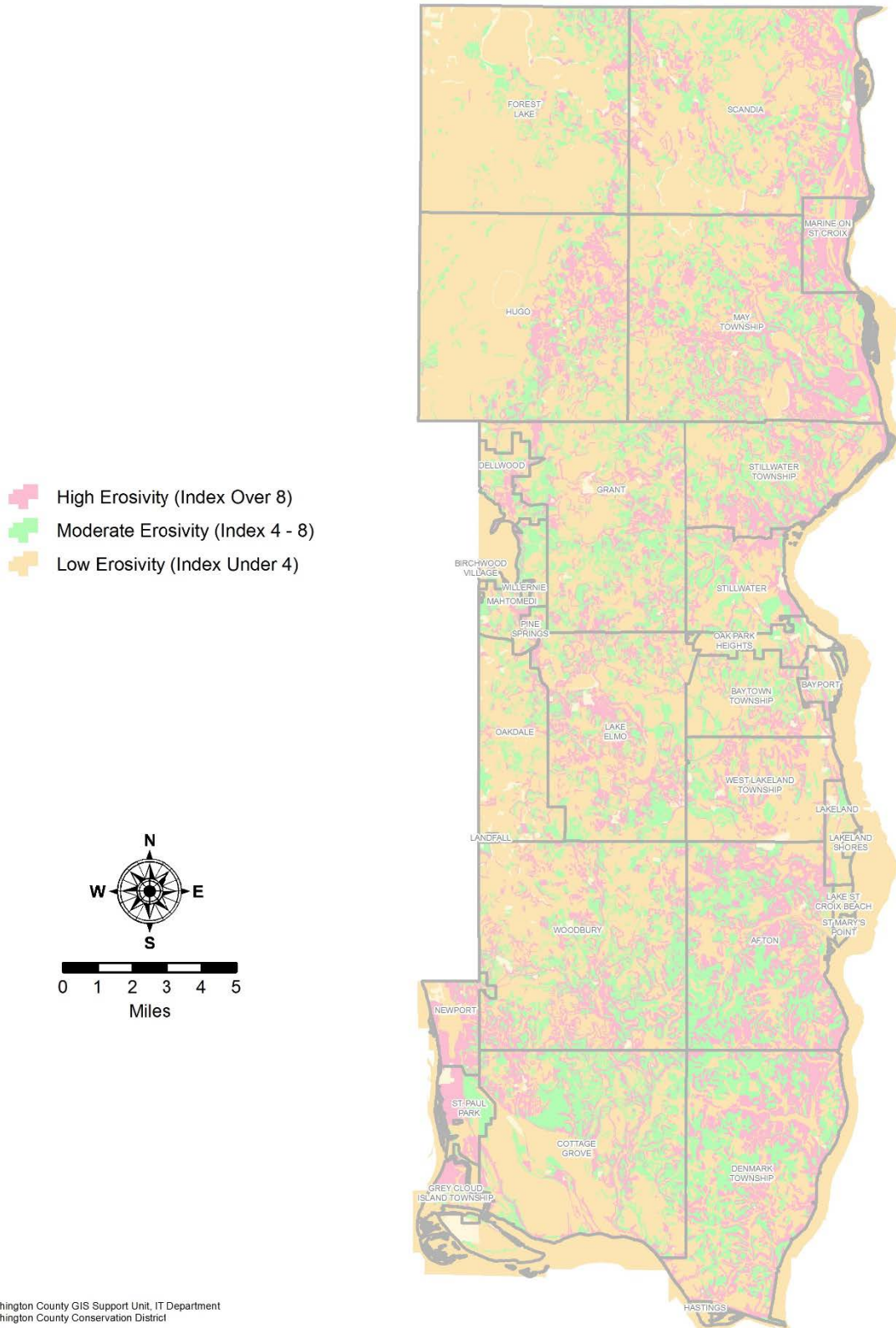
FIGURE 7. Bedrock Geology



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Minnesota Geological Society

**Source: Washington County 2040 Comprehensive Plan

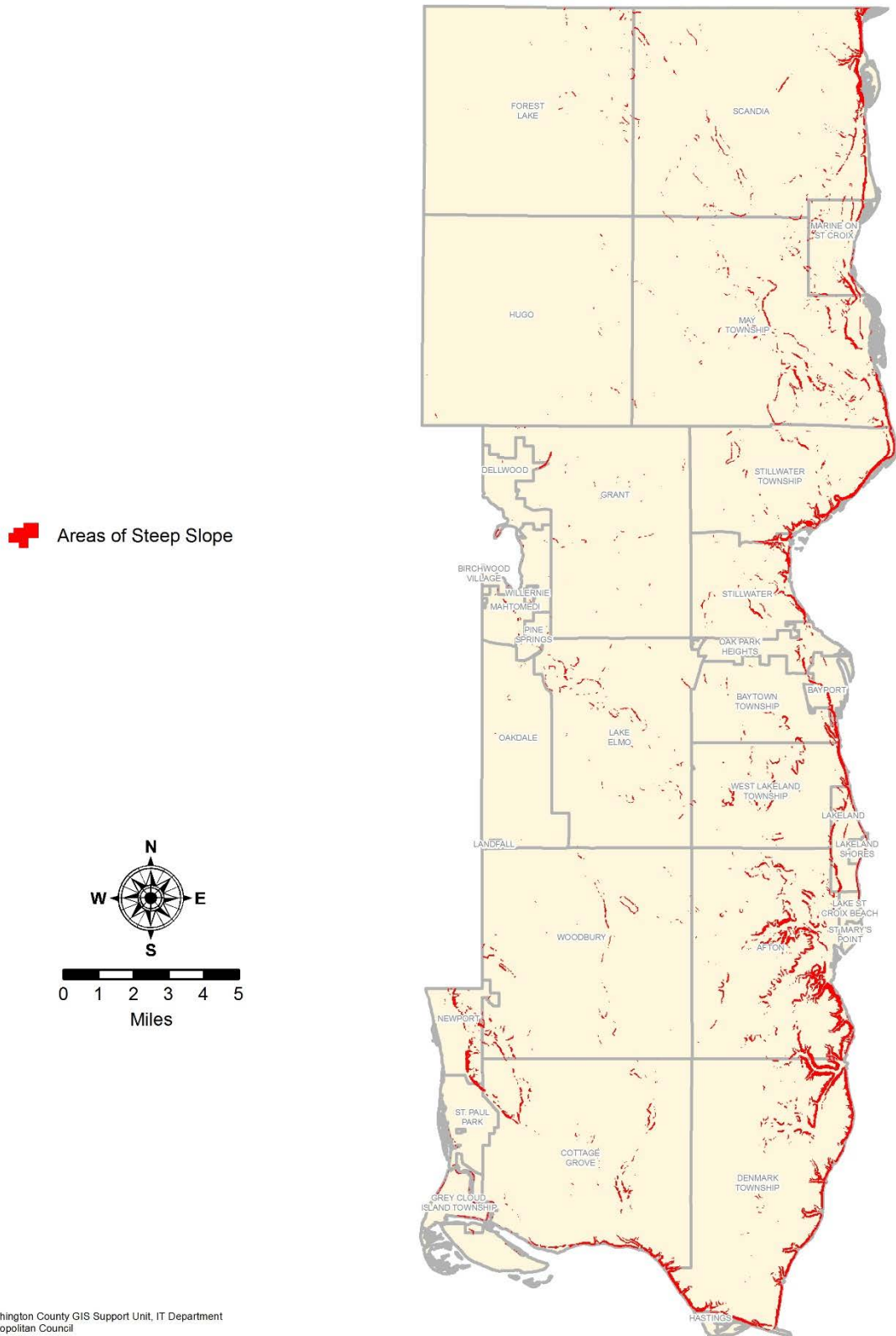
FIGURE 8. Erosivity Index



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Conservation District

**Source: Washington County 2040 Comprehensive Plan

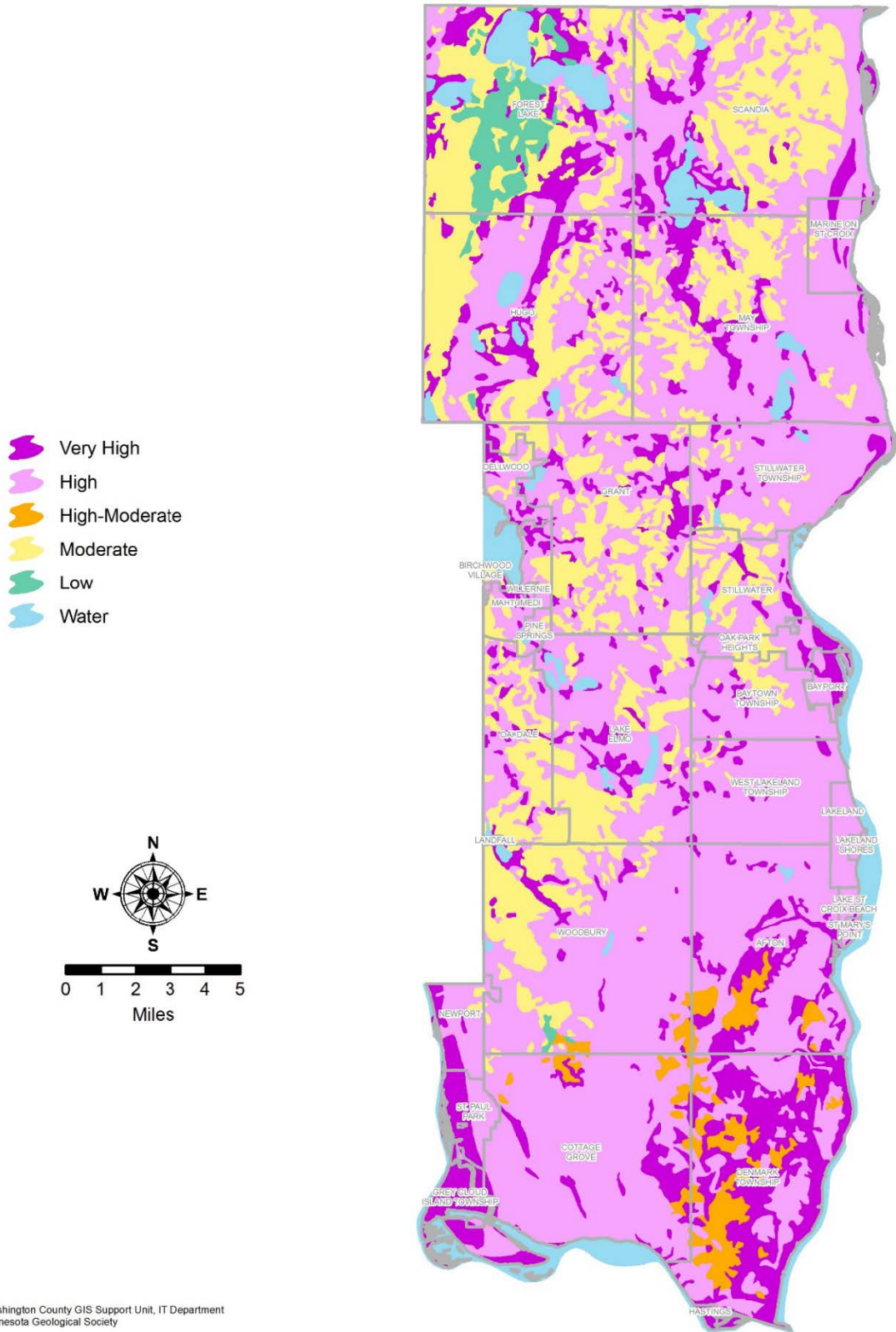
FIGURE 9. Areas of Steep Slope



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Metropolitan Council

**Source: Washington County 2040 Comprehensive Plan

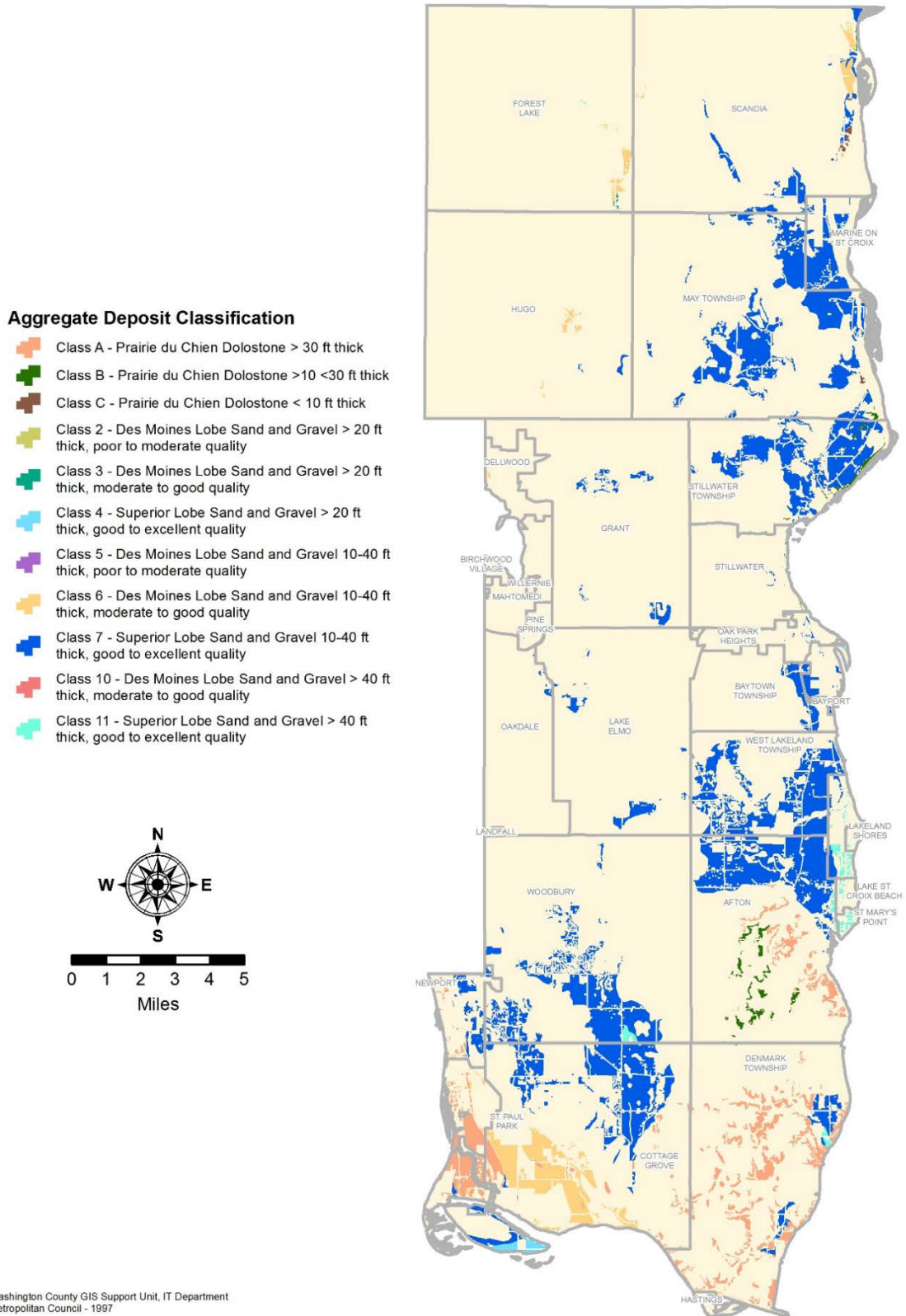
FIGURE 10. Groundwater Sensitivity



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Minnesota Geological Society

**Source: Washington County 2040 Comprehensive Plan

FIGURE 11. Aggregate Resources



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Metropolitan Council - 1997

**Source: Washington County 2040 Comprehensive Plan

FIGURE 12. Prime Farmland Soils



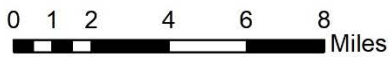
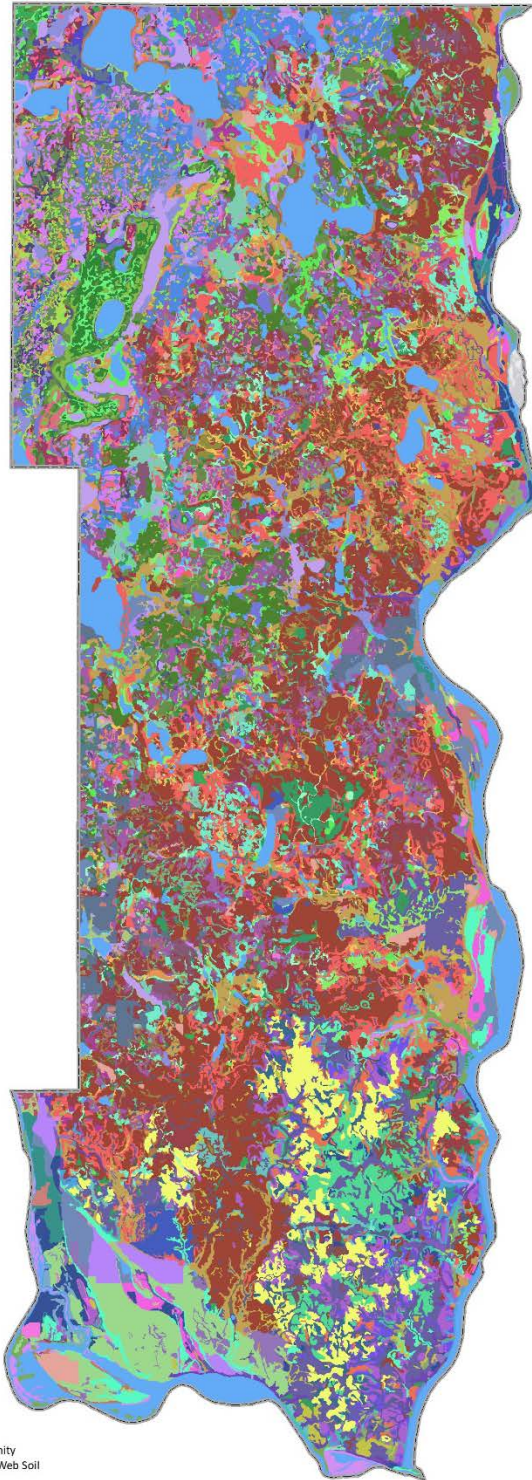
Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Metropolitan Council

**Source: Washington County 2040 Comprehensive Plan

FIGURE 13. Soil Associations

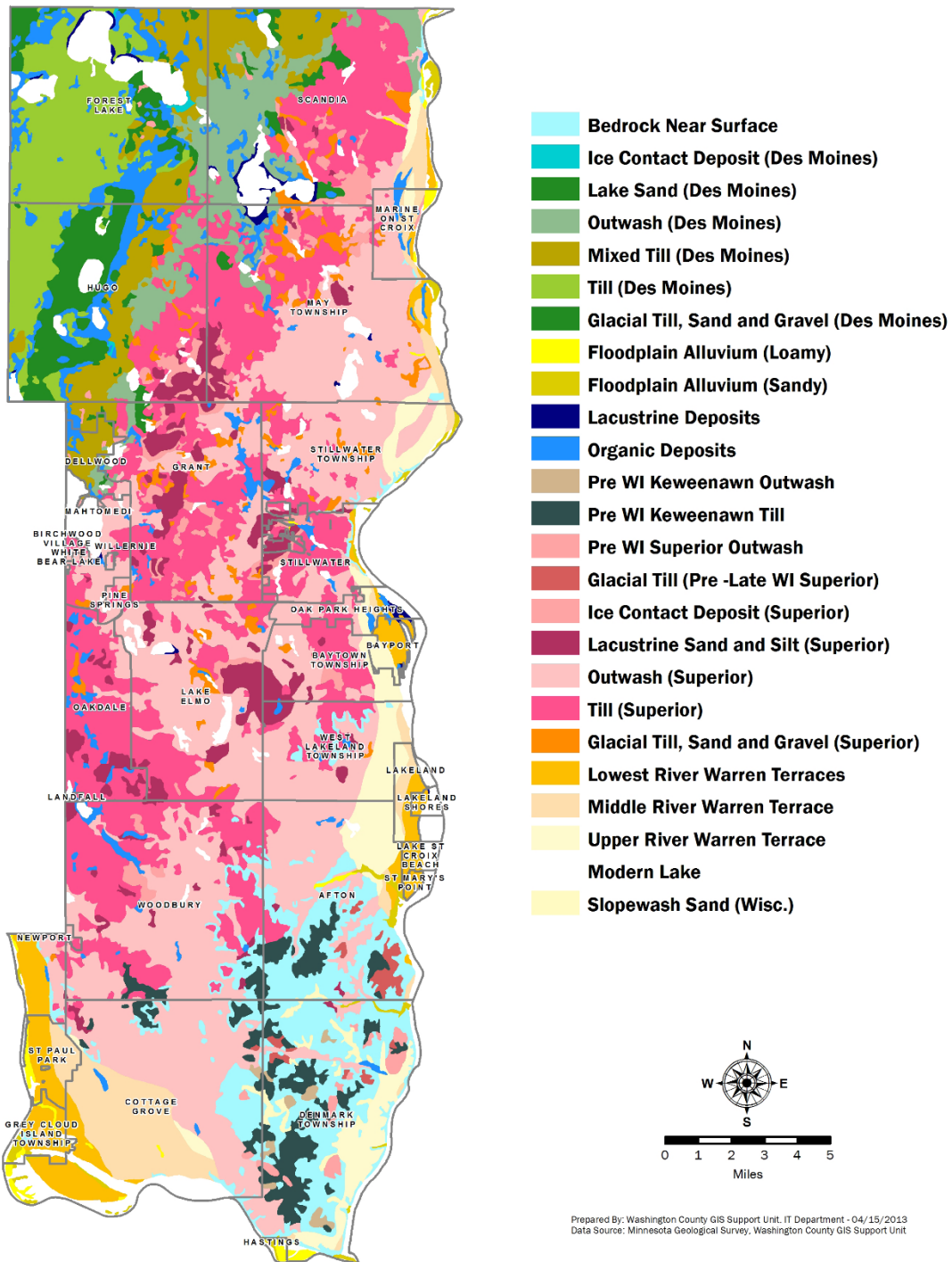
NRCS Map Unit Descriptions:

Dominant soils include: Antigo silt loam, Mahtomedi loamy sand, Chetek sandy loam, Ostrander silt loam, Sparta Loamy Sand, Waukegan silt loam.



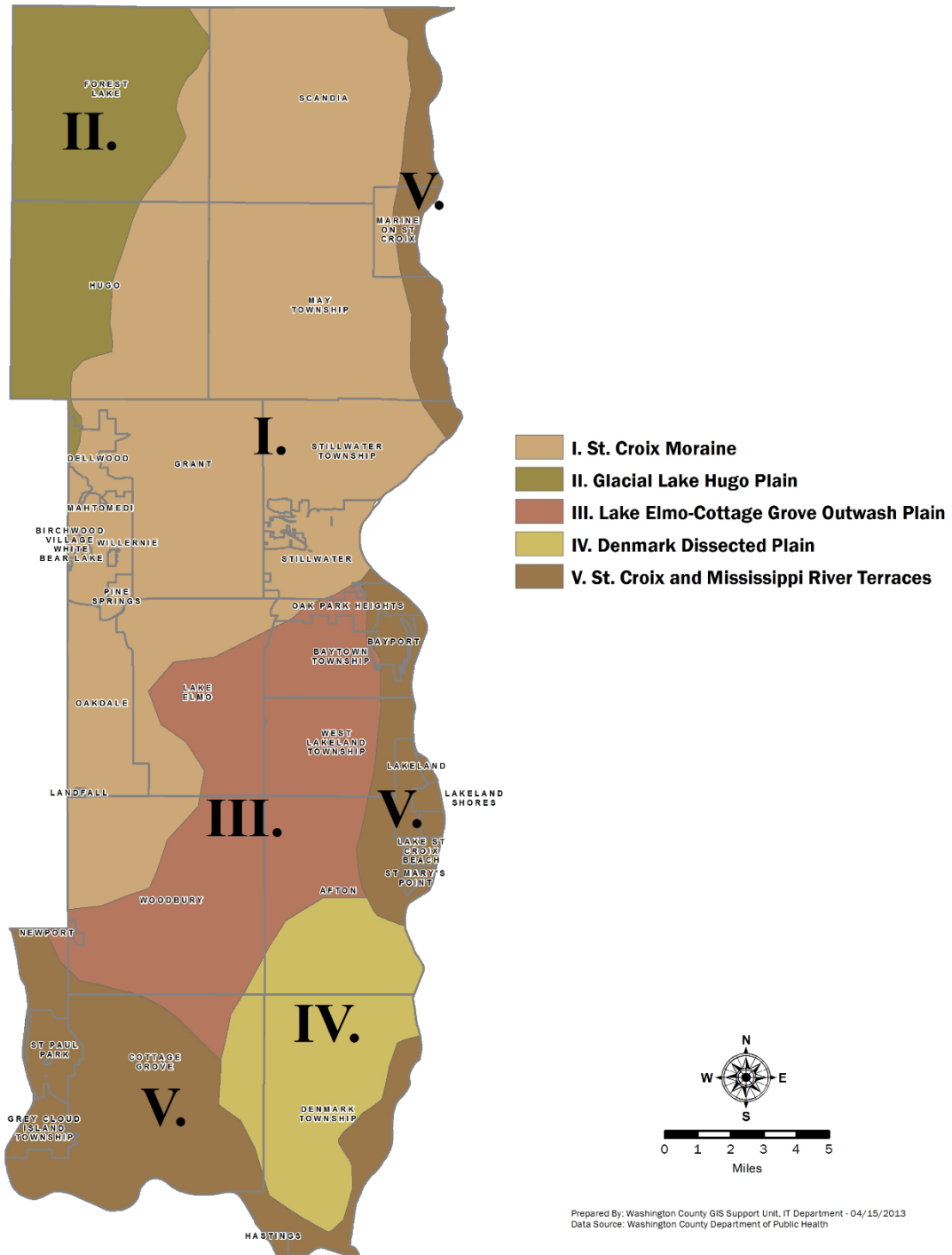
Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at <https://websoilsurvey.nrcs.usda.gov/>. Accessed [January/11/2022].

FIGURE 14. Quaternary (Surface) Geology



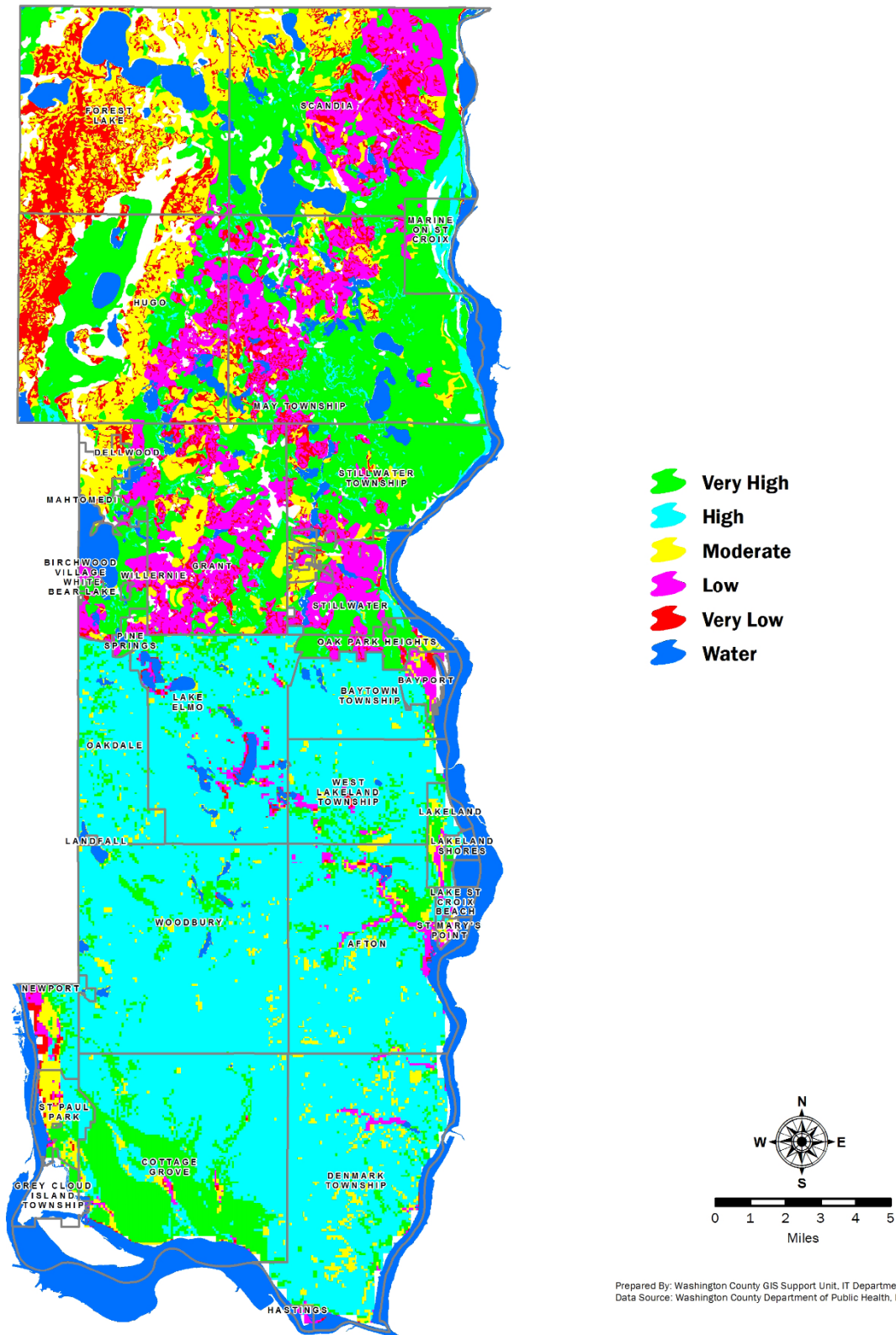
**Source: Washington County 2014-2024 Groundwater Plan

FIGURE 15. Geomorphic Regions



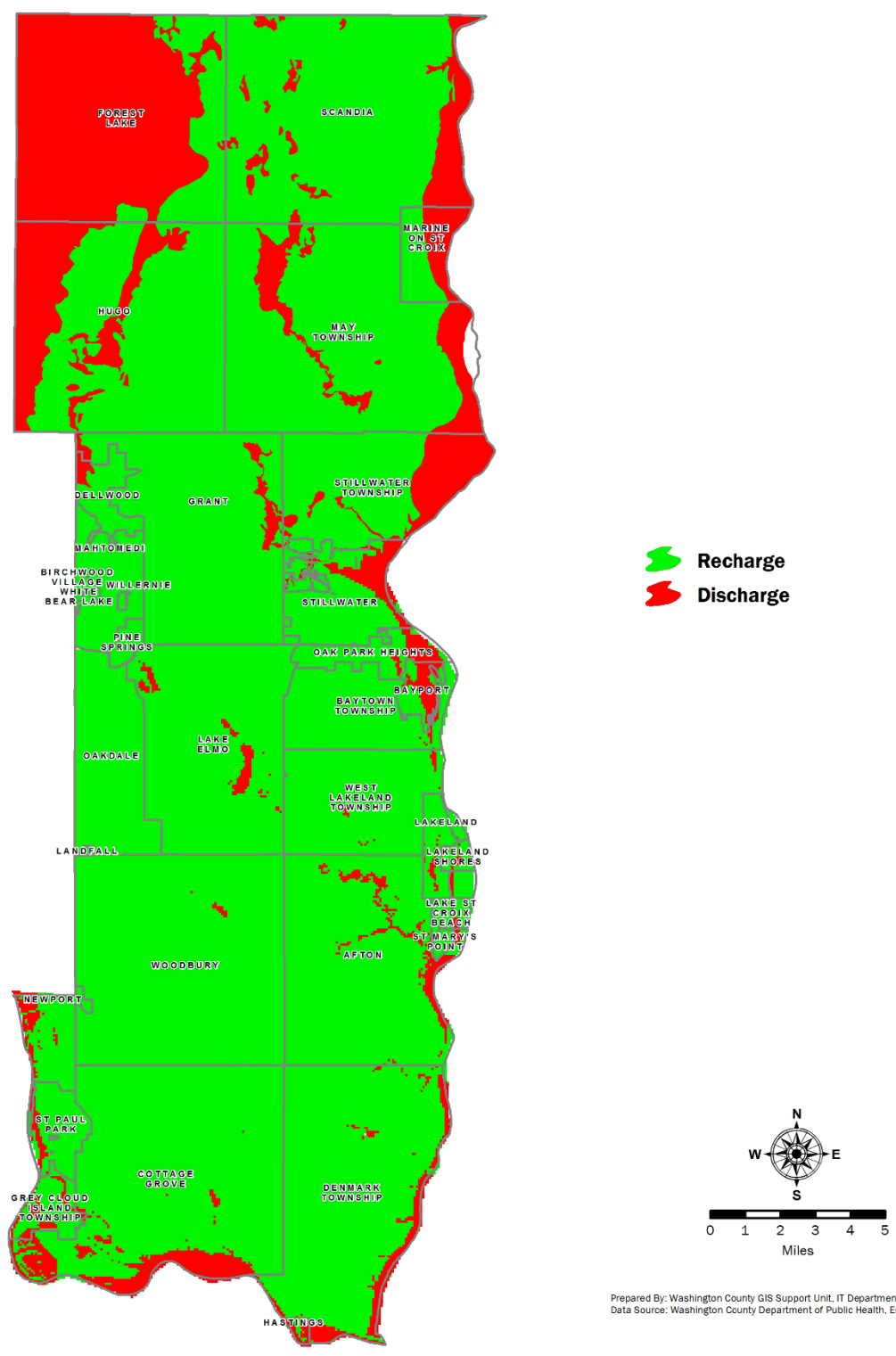
**Source: Washington County 2014-2024 Groundwater Plan

FIGURE 16. Infiltration Potential



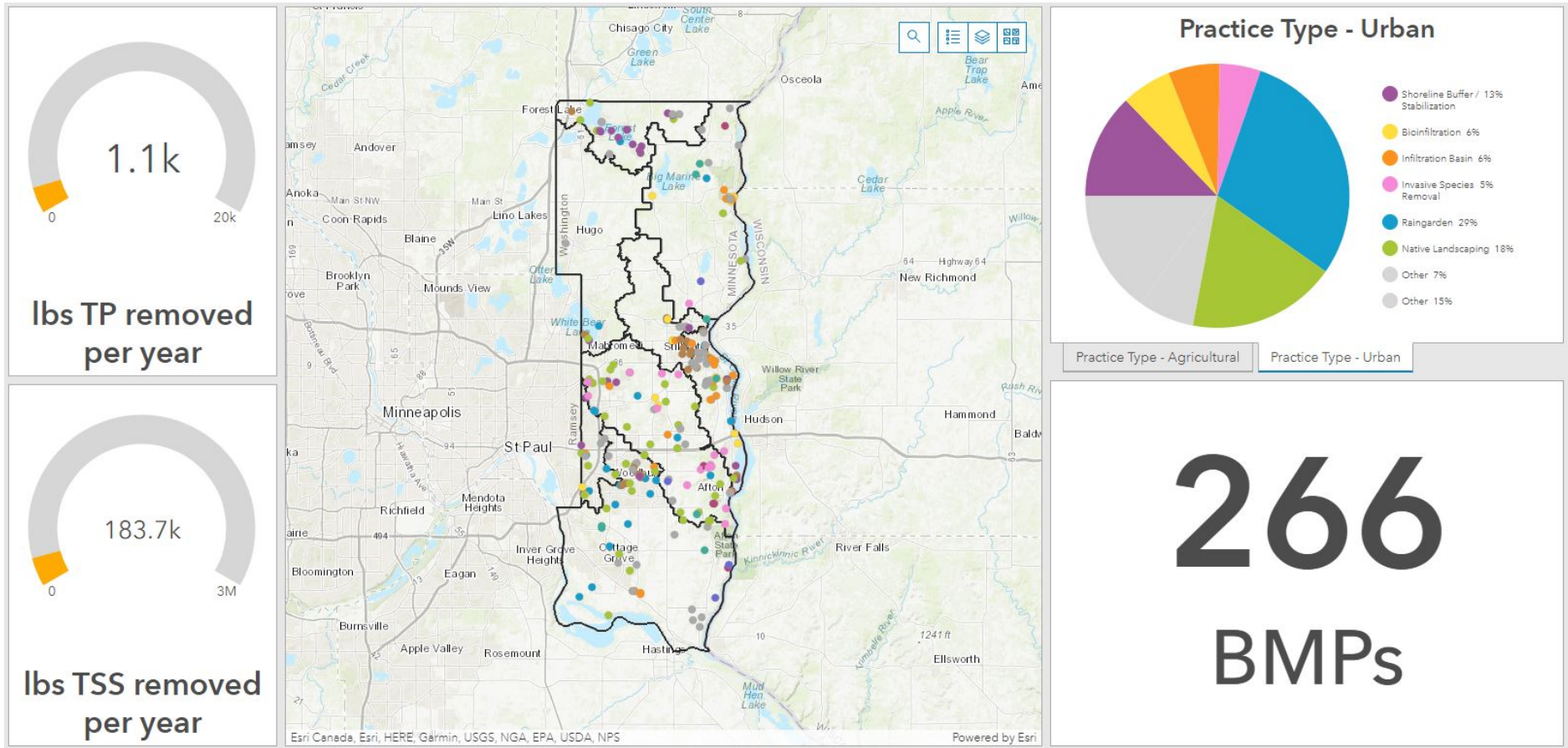
**Source: Washington County 2014-2024 Groundwater Plan

FIGURE 17. Recharge/Discharge Areas.



**Source: Washington County 2014-2024 Groundwater Plan

FIGURE 18. Installed BMP Practices 2016-2020



GLOSSARY OF TERMS

Adaptive Implementation – A planning and prioritization process that adapts continuously to data gathered through outreach and monitoring in order to implement conservation practices.

Best Management Practices (BMPs) – From the Minnesota Department of Agriculture, best management practices are “practices that are capable of protecting the environment while considering economic factors, availability, technical feasibility, ability to implement, and effectiveness.”

Clean Water Act (CWA) – Act of the U.S. Congress passed in 1972 to “restore and maintain the chemical, physical, and biological integrity of the Nation's waters.” 33 U.S.C. §1251 et seq. (1972).

East Metro Water Resource Education Program (EMWREP) – A partnership of 25 local units of government, hosted by the WCD, whose goal is to educate community residents, businesses, staff and decision-makers about issues affecting local lakes, rivers, streams, wetlands and groundwater resources and to engage people in projects to protect and improve the health of these water resources.

Green Infrastructure – According to the U.S. Environmental Protection Agency, Green Infrastructure is defined as “the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspire stormwater and reduce flows to sewer systems or to surface waters.” Clean Water Act, 33 U.S.C. §1251 et seq. (1972).

Natural Resources – Lakes, wetlands, streams, groundwater, rivers, natural areas, wildlife habitat, soil, forests, and other natural features in Washington County.

Subwatershed Analysis (SWA) – Prioritization tool used by 11 metro SWCD’s to identify opportunities for best management practice (BMP) implementation and meet load reduction targets.

Soil and Water Conservation District (SWCD) – Local government unit created under the Minnesota Enabling Act of 1937 and regulated by Chapter 103C Minnesota State Statutes. According to the Minnesota Board of Water and Soil Resources, the purpose of Soil and Water Conservation Districts is to “conserve soil, water, and related natural resources on private land.”

Total Maximum Daily Load (TMDL) – According to the Minnesota Pollution Control Agency, a TMDL is “the maximum amount of a pollutant a body of water can receive without violating water quality standards, and an allocation of that amount to the pollutant’s sources.” TMDLs guide many of WCD’s planning and prioritization initiatives.

Wetland Conservation Act (WCA) – An act passed by the Minnesota State Legislature in 1991 to “preserve the wetlands of the state to conserve surface waters, maintain and improve water quality, preserve wildlife habitat, reduce runoff, provide for floodwater retention, reduce stream sedimentation, contribute to improved subsurface moisture, enhance the natural beauty of the landscape, and promote comprehensive and total water management planning.” [105.392 s. 1].