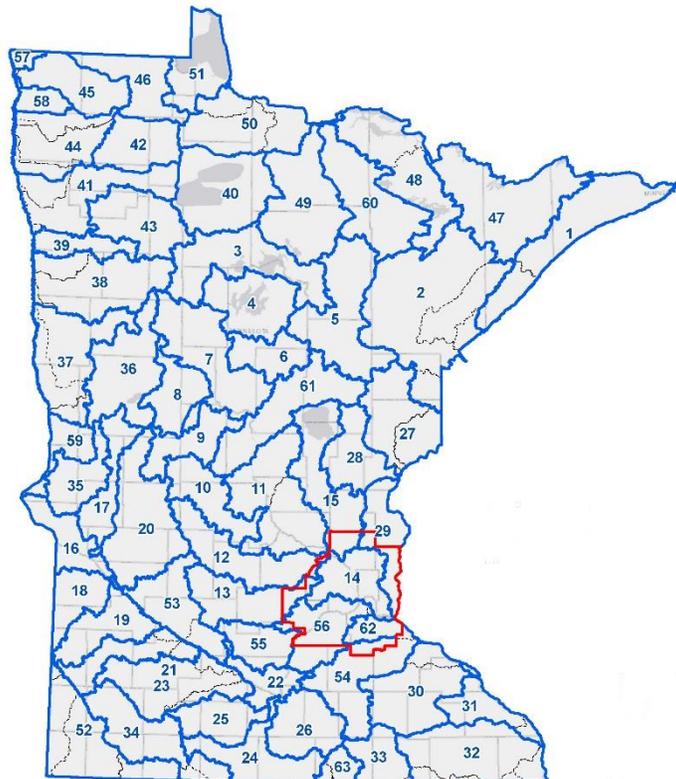




One Watershed One Plan

Transition Plan

Version 1.0



May 2016



Minnesota Board of Water and Soil Resources
520 Lafayette Road North
St. Paul, MN 55155
651-296-3767
www.bwsr.state.mn.us

This plan has been prepared for the Minnesota State Legislature by the Minnesota Board of Water and Soil Resources (BWSR) in fulfillment of the requirements of Minnesota Statutes §103B.801, Subdivision 5(a).

Prepared by: Melissa Lewis, Elizabeth Henley, Lori, Krider, and Celi Haga.

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I. Introduction

One Watershed, One Plan is rooted in work initiated by the Local Government Water Roundtable (Association of Minnesota Counties, Minnesota Association of Watershed Districts, and Minnesota Association of Soil and Water Conservation Districts). Roundtable members recommended that the local governments charged with water management responsibility should organize and develop focused implementation plans on a watershed scale. The recommendation supported 2012 legislation that authorized the Minnesota Board of Water and Soil Resources (BWSR) to adopt methods to allow comprehensive plans, local water management plans, or watershed management plans to serve as substitutes for one another; or to be replaced with one comprehensive watershed management plan (One Watershed, One Plan).

Under current statute, county water plans and soil and water conservation district (SWCD) comprehensive plans are voluntary (Minnesota Statutes §103C.331, Subd. 11. “A district may develop and revise a comprehensive plan...”, and M.S. §103B.331, Subd. 1 “Each county is encouraged to develop and implement a local water management plan...”). In contrast, watershed districts statewide and watershed management organization plans in the metropolitan area are mandatory (M.S. §103D.401, Subd. 1 “The managers must adopt a watershed management plan...” and M.S. §103B.231, Subd. 1 “A watershed management plan is required for watersheds ... wholly or partly within the metropolitan area...”). One Watershed, One Plan is also voluntary. However, all counties, SWCDs, and watershed districts are required to have a current plan to be eligible for state funding.

BWSR’s vision for One Watershed, One Plan, developed with the Roundtable recommendation as a foundation, is to align local water planning on major watershed boundaries with state strategies towards prioritized, targeted, and measurable implementation plans – the next logical step in the evolution of water planning in Minnesota. Additional legislation passed in 2015 provides purposes and plan content requirements for comprehensive watershed management plans, clarifies that local government water plan authorities are retained when plans are substituted or replaced by a comprehensive watershed management plan, and requires BWSR to develop and adopt a transition plan with a goal for statewide transition by 2025.

BWSR will encourage transition to comprehensive watershed management planning (One Watershed, One Plan) by:

1. Continued planning grants and program support.
2. Use performance-based criteria to support planning and implementation.
3. Consideration of comprehensive watershed management plans in future grant allocations, including:
 - a. BWSR will consider status of local adoption of a comprehensive watershed management plan in future competitive grant awards.
 - b. BWSR will require adoption of a comprehensive watershed management plan by 2027 to be eligible for future competitive grant awards through BWSR, except for within the Metropolitan Area.
4. Streamlining current plan extension and amendment requirements within existing authorities.
5. Developing and implementing training, concentrated in the initial five years of the transition period, specifically covering skills needed to transition.
6. Committing staff resources.

Vision: The vision of One Watershed, One Plan is to align local water planning on major watershed boundaries with state strategies towards prioritized, targeted and measurable implementation plans – the next logical step in the evolution of water planning in Minnesota.

Purpose: The purpose of this Transition Plan is to outline expectations and identify incentives for local governments to participate in development and implementation of comprehensive watershed management plans in order to achieve statewide transition by 2025.

7. Supporting models and tools for use by local governments to prioritize resource challenges and risks, and target implementation to produce measurable results that maximize the value of each dollar spent on watershed protection.

More information about these items can be found in section V. Incentives for Transition.

Additional information about the One Watershed, One Plan program can be found on the BWSR website:
<http://www.bwsr.state.mn.us/planning/1W1P/index.html>.

II. One Watershed, One Plan Guiding Principles

BWSR's vision for One Watershed, One Plan is to align local water planning on major watershed boundaries with state strategies towards prioritized, targeted, and measurable implementation plans – the next logical step in the evolution of water planning in Minnesota. This vision is supported with the following Guiding Principles, adopted by the BWSR Board on December 18, 2013. These principles have guided the development of the pilot program initiated in 2014 and the overall One Watershed, One Plan program adopted March 23, 2016.

One Watershed, One Plan will result in plans with prioritized, targeted, and measurable implementation actions that meet or exceed current water plan content standards.

One Watershed, One Plan will set standards for plan content that will be consistent with or exceed the plan approval standards currently in place for local water plans. Most existing water management plans contain adequate inventories of resources and assessment of issues. One Watershed, One Plan will build from this point, with an expanded focus on prioritized, targeted, and measurable implementation of restoration and protection activities. The intent is for these future water plans to use existing plans, local knowledge and other studies and planning documents—including Watershed Restoration and Protection Strategies developed through the Minnesota Pollution Control Agency—to establish plans with clear implementation timelines, milestones, and cost estimates that will address the largest threats and provide the greatest environmental benefit unique to each watershed.

One Watershed, One Plan is not an effort to change local government.

Local governments have been at the forefront of water management dating back to 1937 with the formation of the State's first SWCD. One Watershed, One Plan is intended to utilize the existing structures of counties, SWCDs, watershed districts and Metropolitan watershed management organizations by increasing collaboration and cooperation across political boundaries.

One Watershed, One Plan will strive for a systematic, watershed-wide, science-based approach to watershed management; informed by the participating local governments.

It is important for all communities to take part in managing their watersheds through goal setting, monitoring, restoring and protecting water resources and local habitats and ensuring a good quality of life for all who live, work, and recreate in those spaces. A decidedly “bottom up” approach for water management—allowing the key discussions of major water resource issues, concerns, problems, goals and objectives and potential solutions to originate and be first fully vetted at the stakeholder level—is envisioned. Expanding involvement and collaboration at the ground level creates greater buy-in and support at all levels of government.

One Watershed, One Plan will use the state's delineated major watersheds (8-digit hydrologic unit codes or HUC8) as the starting point for defining the preferred scale for local watershed management planning.

The Local Government Water Roundtable (LGWR), a collaboration between the Association of Minnesota Counties, the Minnesota Association of Watershed Districts, and the Minnesota Association of Soil and Water Conservation Districts, determined it is in the public interest to manage ground and surface water resources from the perspective of watersheds and aquifers and to achieve protection, preservation, enhancement, and restoration of the state's valuable water resources. This determination is consistent with the state's water management policy, furthered through legislation passed in 2012 that provided BWSR with: the authority to develop and implement a comprehensive watershed management planning approach and to establish a suggested watershed boundary framework for implementing this planning approach. One Watershed, One Plan will transform the current system of water plans, largely organized along political boundaries, to one where plans are coordinated and consolidated largely on a watershed basis.

One Watershed, One Plan must involve a broad range of stakeholders to ensure an integrated approach to watershed management.

The underlying principle of watershed management is that people, land, and water are connected. People use land in a variety of ways, and affect ecosystems and ultimately their own communities for better or worse. Managing and protecting the environment while providing a high quality of life for people is a complex process that is most successful when governing bodies, community members, and experts in various fields are true partners in the planning process. One Watershed, One Plan envisions an approach that will pull parties together in every aspect of the water arena in a way that goes beyond the interests of any one government agency or stakeholder, and in a way that has never been done before.

Plans developed within One Watershed, One Plan should embrace the concept of multiple benefits in the development and prioritization of implementation strategies and actions.

Prioritized, multi-benefit projects provide benefits to more than one group or interest and address more than one environmental resource within a watershed. These types of projects are necessary to build the support of citizens and agencies, achieve water quality and quantity goals, and produce the environmental goods and benefits that a healthy watershed provides. Examples of multiple benefits might include a combination of any of the following: flood control, water quality benefits, ecological benefits, administrative efficiencies, economic benefits, or others. Identification of and action on multi-benefit projects should be a priority in One Watershed, One Plan strategies and actions.

One Watershed, One Plan implementation will be accomplished through formal agreements among participating local governments on how to manage and operate the watershed.

Decision making that spans political boundaries is essential to fully implement watershed management and achieve established goals for the watershed; therefore, formal agreements outlining the means and method for this decision making are also essential.

One Watershed, One Plan planning and implementation efforts will recognize local commitment and contribution.

History shows us that when local water management programs and projects rely almost entirely on outside funding, they are unable to sustain themselves over time. Locally supported and funded technical, administration, support, and outreach activities that leverage funding from the State will be key to ensuring sustainable local government capabilities and long-term success on both the local level and watershed scale.

One Watershed, One Plan is not intended to be a one size fits all model.

One Watershed, One Plan must recognize that our local governments charged with water management are just as diverse as the water resources and landscapes that we have in the state. As such, the One Watershed, One Plan policies and procedures guided by this principle will be designed to provide options for local governments that can account for these differences while at the same time allowing them to move forward in achieving the transition to comprehensive watershed management plans that blanket the state.

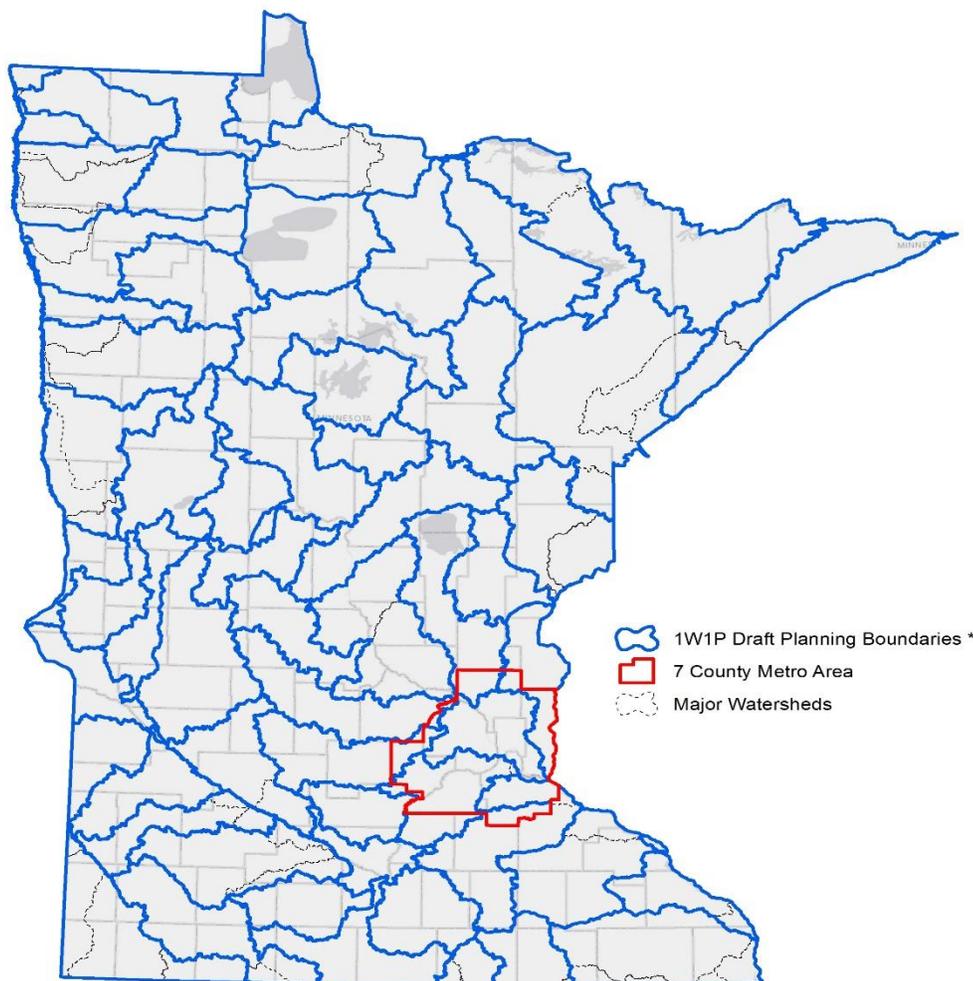
III. Transition Overview

Minnesota Statutes §103B.801 requires BWSR to “develop and adopt, by June 30, 2016, a transition plan for development, approval, adoption, and coordination of plans consistent with section 103A.212. The transition plan must include a goal of completing statewide transition to comprehensive watershed management plans by 2025.” The statute also indicates that the metropolitan area may be considered for inclusion in the transition plan. The purpose of this transition plan is to outline expectations and identify incentives for local governments to participate in development and implementation of comprehensive watershed management plans statewide, by 2025. Incentives may include both funding and non-funding options.

A Comprehensive Watershed Management Plan means a plan to manage the water and related natural resources of a watershed ... that has been approved as a substitute by the [BWSR] board and adopted by local units of government...” (Minnesota Statutes §103B.3363, Subd. 3a)

BWSR adopted the Suggested Boundary Framework map shown in Figure II.1 which provides the geographic context for development of comprehensive watershed management plans, consistent with Minnesota Statutes §103A.212, Minnesota’s Water Management Policy. Sixty-three planning boundaries currently exist within this map. Of these sixty-three, two are contained wholly within and six cross into the metropolitan area. These areas are more fully discussed in the Section VI. One Watershed, One Plan and the Metropolitan Surface Water Management Act.

Figure II.1: Suggested Boundary Framework



Recognizing the legislative expectation for transition of all local water planning of counties, watershed districts, and SWCDs to comprehensive watershed management plans by the year 2025; Table 1 outlines an anticipated pace of progress necessary to meet this goal, possible if funding from the state for plan development remains consistent with funding available in the 2016-2017 biennium. This pace of progress assumes development of each plan takes 1.5-2 years, and that the pace is reasonable for local government and state agency staff supporting the transition.

Table II.1: Estimated Pace of Progress*

<u>Start Year</u>	<u># Plans Adopted or In Progress</u>	<u>Sum of Plans Completed**</u>
2014-15 (pilot years)	5	
2016	6	5
2017	6	11
2018	7	17
2019	7	24
2020	7	31
2021	7	38
2022	7	45
2023	7	52
2024	2	59
2025	***	61

*Assuming planning funds continue to be available from the state throughout the transition period.

**Assume 1.5 - 2 years from start to completion, does not include two planning boundaries wholly in metro, and does not take into account that the planning boundaries are suggested and the final number of boundaries may change.

***Anticipate some plans will be finishing in 2025 and 2026, and revisions of the original pilot plans will start in 2026 at the end of the 10-year authorization for the first comprehensive watershed management plan.

IV. Initiating Plan Development

Participation in One Watershed, One Plan is voluntary. The first plans were initiated under a pilot program begun in 2014. The pilots were selected through a nomination process with the dual purpose of completing a watershed-based plan and informing development of the overall One Watershed, One Plan program. With adoption of a program by the BWSR Board in 2016, any partnership within a watershed boundary that meets the requirements outlined in the One Watershed, One Plan Operating Procedures may initiate development of a comprehensive watershed management plan. Plan initiation will be coordinated to the extent possible with existing local water plan updates, with development or completion of Watershed Restoration and Protection Strategies (WRAPS, see <http://www.pca.state.mn.us/>), and with consideration of the readiness and availability of the partners to participate in the planning effort.

Transitioning from traditional local water planning to comprehensive watershed management planning (One Watershed, One Plan) can be challenging and time-consuming, both for the local governments involved and the state agencies providing support -- especially in the early years of a new program. To assist local governments with the transition, the legislature provided funding to BWSR in the 2014/2015 biennium and again in the 2016/2017 biennium for the purposes of assistance, oversight, and planning grants to local governments. Successful transition is in part dependent on continuation of this funding. Additionally, BWSR will attempt to maintain geographic distribution of planning efforts initiated with these funds to further assist state and local agency partners in managing workload associated with the transition.

Coordination with existing processes, maintaining geographic distribution, and providing planning grants are all methods for streamlining and assisting with the transition. In addition, BWSR recognizes that some areas of the state will benefit from earlier transition to watershed-based planning to address potential resource priorities and threats. High-level state priorities identified in the Nonpoint Priority Funding Plan (NPPF) include: restoring impaired waters that are closest to meeting state water quality standards; protecting those high-quality unimpaired waters at greatest risk of becoming impaired; and restoring and protecting water resources for public use and public health, including drinking water. The NPPF is a requirement of the Clean Water Accountability Act, passed by the Minnesota Legislature in 2013, to “prioritize potential nonpoint actions based on available WRAPS, TMDLs, and local water plans.” (Minnesota Statutes, Section 114D.50, subdivision 3a). To consider certain aspects of these high-level priorities statewide, BWSR has partnered with the University of Minnesota to leverage the Watershed Assessment Tool in the following basin assessments. The Watershed Assessment Tool is a GIS-based tool developed in Microsoft Excel that scores watersheds within a sub-basin based on user-selected attributes. Attributes can include both natural and anthropogenic characteristics. A ranking of these scores adds to the framework used for making decisions associated with future planning funding.

Finally, factors such as the status of current water plans and the WRAPS report will influence the readiness of local partners to participate in development of a comprehensive watershed management plan. Analysis of all these factors on a statewide basis while maintaining geographic distribution is complex; therefore, the following basin-by-basin assessment applies the factors to each planning boundary and provides discussion at a basin scale. BWSR will consider this analysis in future delivery of planning grants for transition. Partnerships within planning boundaries that decide to move forward without financial assistance from BWSR are also encouraged to consider the factors used in this analysis.

The Board of Water and Soil Resources will encourage initiation of comprehensive watershed management planning (One Watershed, One Plan) by:

1. Coordinating plan development with existing water plan processes and schedules.
2. Maintaining geographic distribution of planning efforts.
3. Providing planning grants as available.
4. Emphasizing and prioritizing planning that addresses the high-level state priorities identified in the Nonpoint Priority Funding Plan.

1. Basin-by-Basin Assessment

While the state includes all or portions of ten major watershed basins, the following analysis combines a few of the major basins where there is significant overlap in counties within the combined area, plus fewer planning boundaries within each basin. Additionally, each assessment includes a description of the current status of plan expiration dates and estimated WRAPS completion dates. These dates will change over the timeframe of this Transition Plan. For the most up-to-date information on the status of plans, go to the BWSR website:

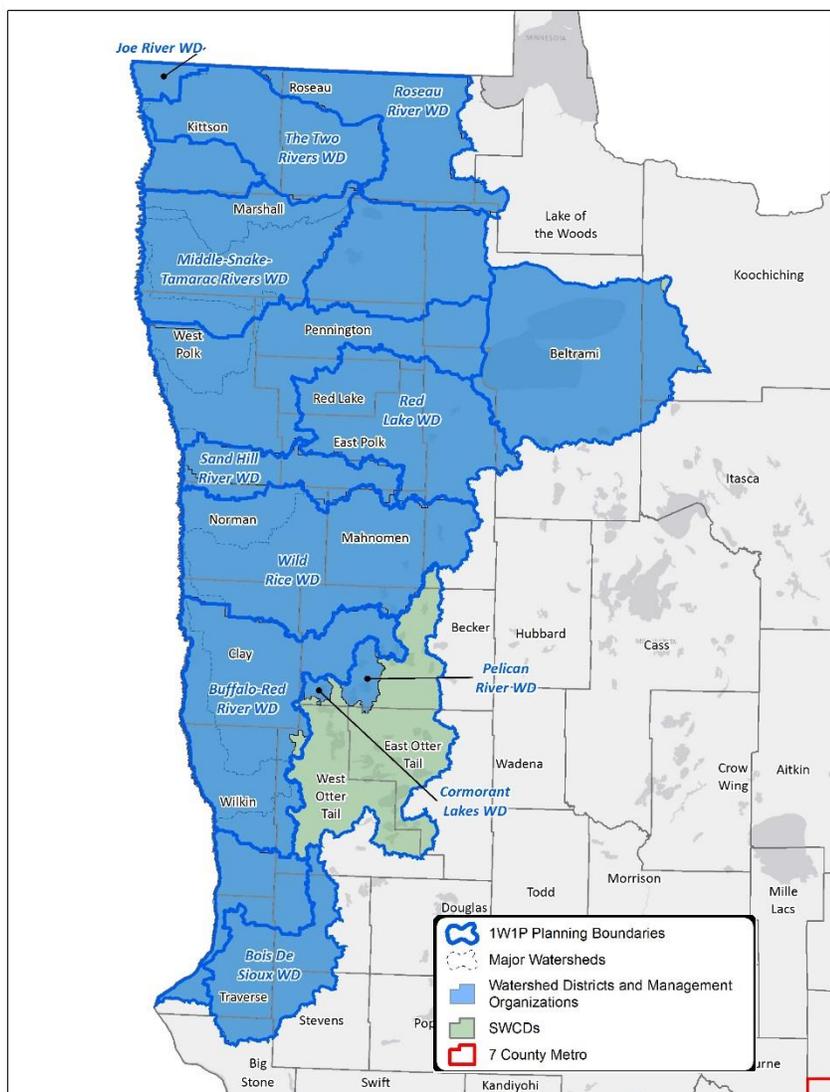
www.bwsr.state.mn.us/. For more information about the WRAPS and individual watershed information, go to: www.pca.state.mn.us/index.php/water/water-types-and-programs/watersheds/watershed-overview-map.html.

a. Red River Basin

The Red River Basin stretches from northeastern South Dakota and west-central Minnesota northward through eastern North Dakota and northwestern Minnesota into southern Manitoba. It ends where the Red River empties into the southern end of Lake Winnipeg. The Minnesota portion of the Red River Basin covers about 37,100 square miles in northwestern Minnesota. It is home to about 17,842 miles of streams, 668,098 acres of lakes, all or part of 21 counties, 12 watershed districts, and 15 One Watershed, One Plan suggested planning boundaries (Figure III.1).

The Red River Basin is a highly agricultural watershed. As such, pollution associated with drainage and damages

Figure III.1: Red River Basin One Watershed, One Plan Boundaries and Local Government Units



associated with flooding are of concern. Also, there are important ecological features and habitat, including fens and bogs, and large amounts of wetlands and lakes in some portions of the basin. There are also concerns for nutrient loading, specifically phosphorus, into Lake Winnipeg..

Local governments in the Red River Basin have a long history of collaboration, primarily due to basin-wide flooding. Many of these local governments have already expressed commitment to One Watershed, One Plan through either commitment to the pilot effort or synchronization of current planning efforts to better align with future development of comprehensive watershed management plans. The basin is nearly 100% covered by watershed districts. The existing Red River Watershed Management Board, a partnership between the watershed districts in the basin, has a potential regional leadership role in facilitating transition.

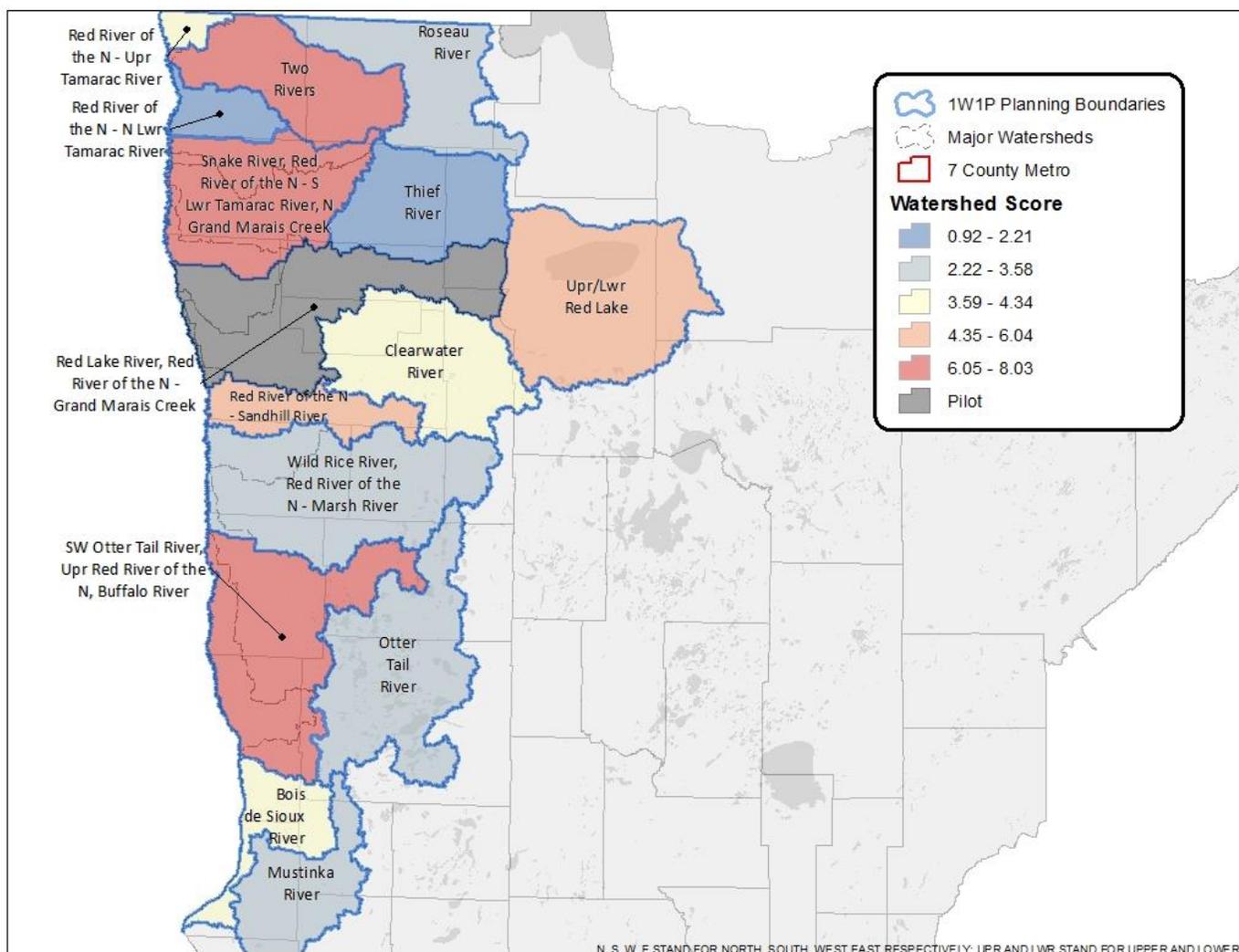
County and watershed district plans within the basin have expiration dates that range from the end of 2016 to 2022. At the writing of this transition plan, all the SWCDs in the basin adopt their county's local water plan. The

majority of the WRAPS in the Red River Basin are scheduled to be completed by 2019 or earlier, with only the Ottertail River not scheduled for completion until 2020. Currently, the Red River Basin contains all or portions of 34 different local water plans. Transitioning to One Watershed, One Plan could reduce this number to 15 plans in the basin. This basin also includes the Red Lake River One Watershed, One Plan pilot planning area, which will have a completed plan in 2016.

With fifteen suggested planning boundaries in this major basin, including the Red Lake River pilot area, partnerships would need to initiate planning efforts in one to two planning areas per year starting in 2016 to achieve the 2025 goal.

Figure III.2 below shows application of the Watershed Assessment Tool in the Red River Basin, focusing on indices that represent slopes, drained lands, impaired streams, biologically significant areas, and soils. See Appendix C for specific attributes used. The watershed score is only relative to the planning boundaries in the basin. The results provide additional factors for consideration in future planning funding decisions in this basin.

Figure III.2. Watershed Assessment Model Results, Red River Basin



b. Rainy River and Arrowhead (Great Lakes) Basins

The Rainy River and Arrowhead Basins were combined for the purposes of this assessment due to the two basins spanning a number of common counties in the area as well as the similarities in the landscapes within the two basins. The Basins are highly forested with smaller, remote cities in the interior and port cities along the Lake Superior Coast, including Duluth, Two Harbors, Silver Bay and Grand Marais.

The Rainy River Basin sits on Minnesota's border with Canada and encompasses portions of Beltrami, Cook, Itasca, Koochiching, Lake, Lake of the Woods, Roseau, and St. Louis Counties. This area is highly valued for its natural resources, including forestry, fisheries, as well as iron ore and taconite. A large portion of this basin is located in the Boundary Waters Canoe Area, a world-known wilderness area. The waters from the Rainy River Basin flow north, eventually arriving in Hudson Bay.

The Minnesota portion of the Lake Superior Basin encompasses portions of Aitkin, Carlton, Cook, Itasca, Lake, Pine and St. Louis Counties, covering approximately 6,200 square miles. Major watersheds in the basin include the Cloquet, Nemadji and St. Louis River systems, as well as the North Shore tributaries to Lake Superior. Lake Superior's lake clays near the shoreline are highly susceptible to transport to surface waters. This, combined with a steep change in elevation along the North Shore of Lake Superior, results in ravine and bluff erosion. Protective measures are needed to maintain the integrity of this mostly undeveloped tract of land.

Included in the combined area are all or part of ten counties, eleven SWCDs, one watershed district, and eight suggested planning boundaries, including the Lake Superior North One Watershed, One Plan pilot (see Figure III.3). County plan expiration dates in this area range from 2016-2024. The watershed district in the combined basins is the Warroad Watershed District in the northwest portion of the Rainy River with a plan expiration date of 2017. As of the writing of this transition plan, only two SWCDs in the basin write their own five-year comprehensive plan (Carlton and Lake). A few of the WRAPS are scheduled to be completed in 2016 and 2017, a few more in 2018 and

2019, and the rest are scheduled to be completed after 2020. This basin also includes the Lake Superior North One Watershed, One Plan pilot planning area, which will have a completed plan in 2016. Transitioning to One Watershed, One Plan in these basins could reduce the number of local water plans from thirteen currently to eight total within the basin.

With eight suggested planning boundary partnerships, these basins will need to initiate about one planning effort every year to achieve the 2025 goal.

Figure III.3: Rainy River and Arrowhead One Watershed, One Plan Boundaries and Local Government Units

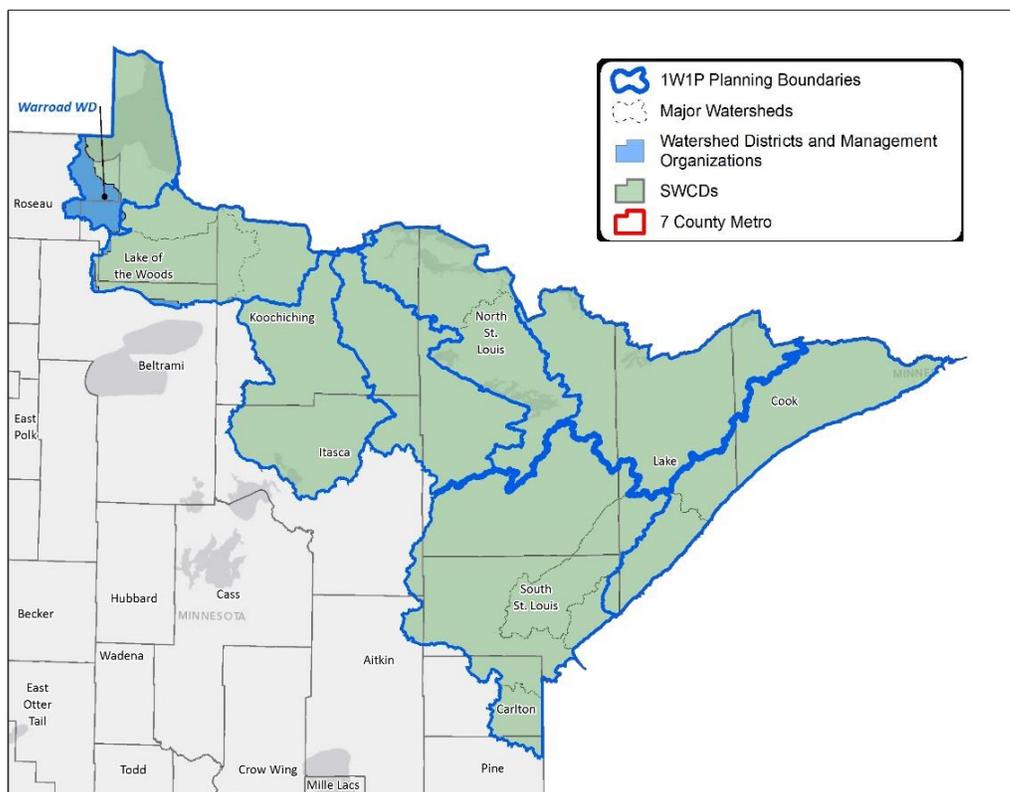
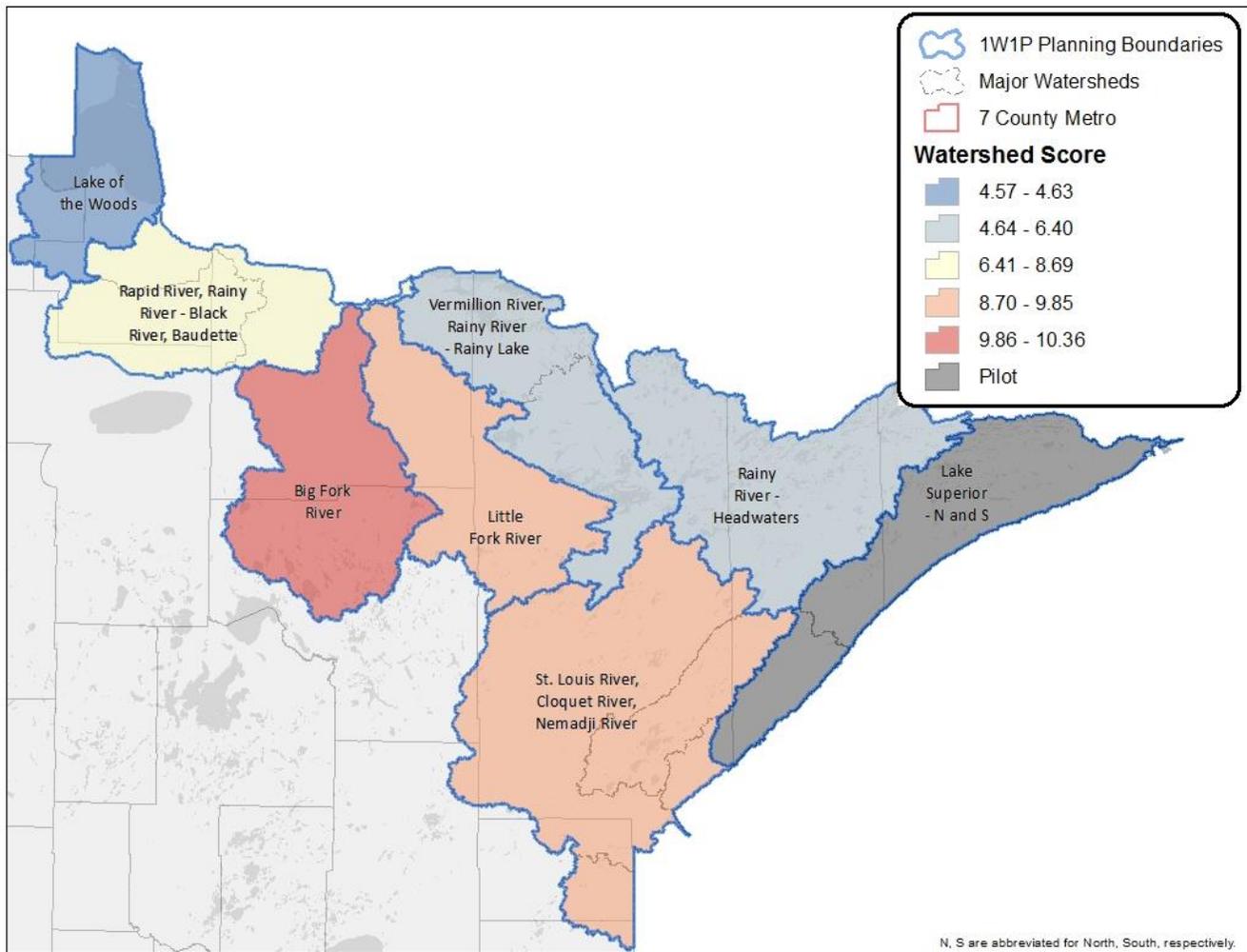


Figure III.4 shows application of the Watershed Assessment Tool in the Rainy River and Arrowhead Basins, focusing on the indices in the model that represent wildlife, soil erosion, and water quality risks, timber land values, and unimpaired lakes and streams. See Appendix C for specific attributes used. The watershed score is only relative to the planning boundaries in the basin. The results provide additional factors for consideration of future planning funding decisions in these basins.

Figure III.4. Watershed Assessment Model Results, Arrowhead and Rainy River

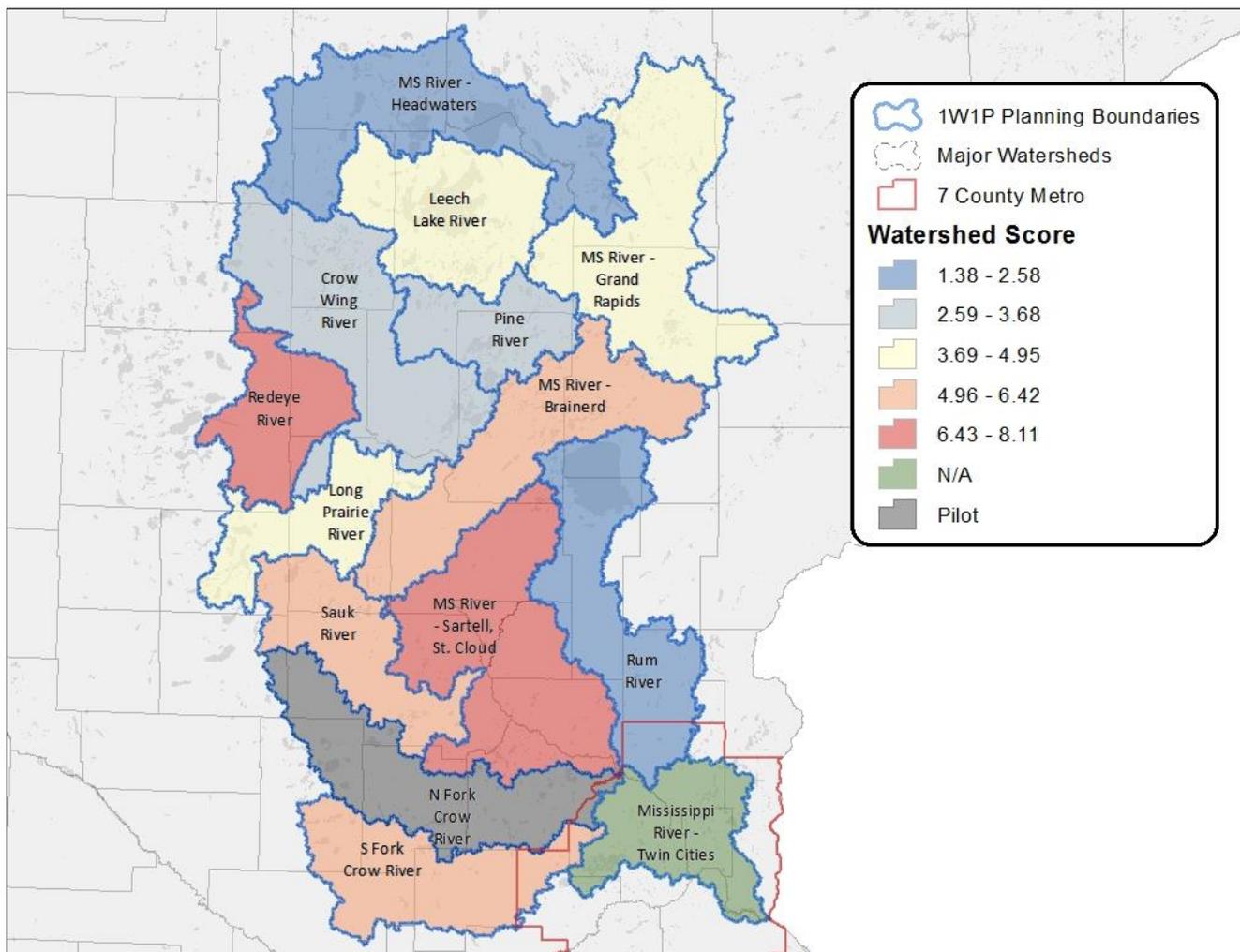


completed plan in 2017. Excluding the metro plans, this basin has the potential to go from portions of thirty seven plans (recognizing many of these overlap into other basins) to thirteen total in the basin.

With thirteen planning boundaries, including the North Fork Crow pilot, partnerships in one to two suggested planning boundaries per year would need to initiate planning efforts to meet the 2025 goal.

Figure III.6 shows application of the Watershed Assessment Tool in the Upper Mississippi, focusing on indices that represent population growth and landuse change, drinking water and wellhead protection areas, and unimpaired lakes and streams. See Appendix C for specific attributes used. The watershed score is only relative to the planning boundaries in the basin. The results provide additional factors for consideration in future planning funding decisions in this basin.

Figure III.6. Watershed Assessment Model Results, Upper Mississippi

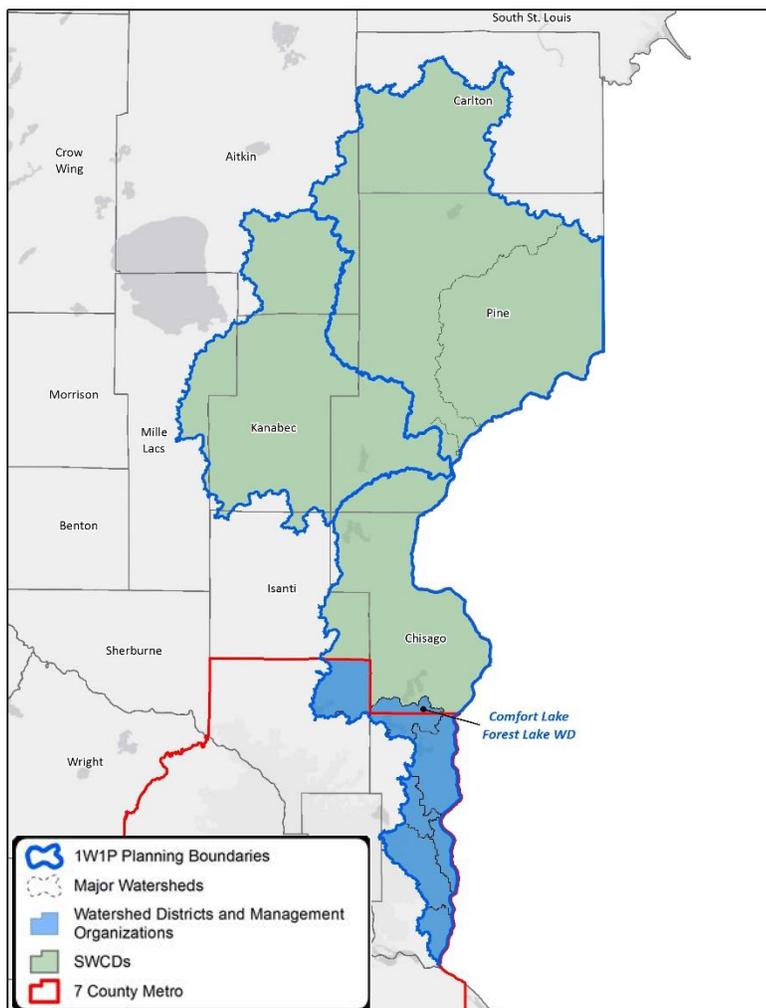


d. St. Croix Basin

The St. Croix River Basin covers approximately 7,760 square miles and extends from near Mille Lacs Lake in Minnesota on the west to near Cable, Wisconsin, on the east. Approximately 46% of the watershed is located in Minnesota. The northern portions as well include large amount of wetlands. Increasing population pressures are driving a shift in land use change. The Minnesota portion of the St. Croix River Basin contains all or part of nine counties and nine SWCDs and three One Watershed, One Plan planning boundaries. Seven watershed districts and watershed management organizations are also contained within the metropolitan portion of the basin.

The area has had an active partnership through the non-profit St. Croix River Association which could provide a potential leadership role in the transition. Additionally, the Snake River major watershed already has an active partnership through a joint powers agreement between the counties within the watershed, and the local governments in the Lower St. Croix portion of the watershed have actively collaborated historically. The portion of the watershed within the metropolitan area includes the North East Metro Groundwater Management Area, adding complexity to this watershed. See Section VI. One Watershed, One Plan and the Metropolitan Surface Water Management Act of this plan for more discussion on the metropolitan portion of this basin.

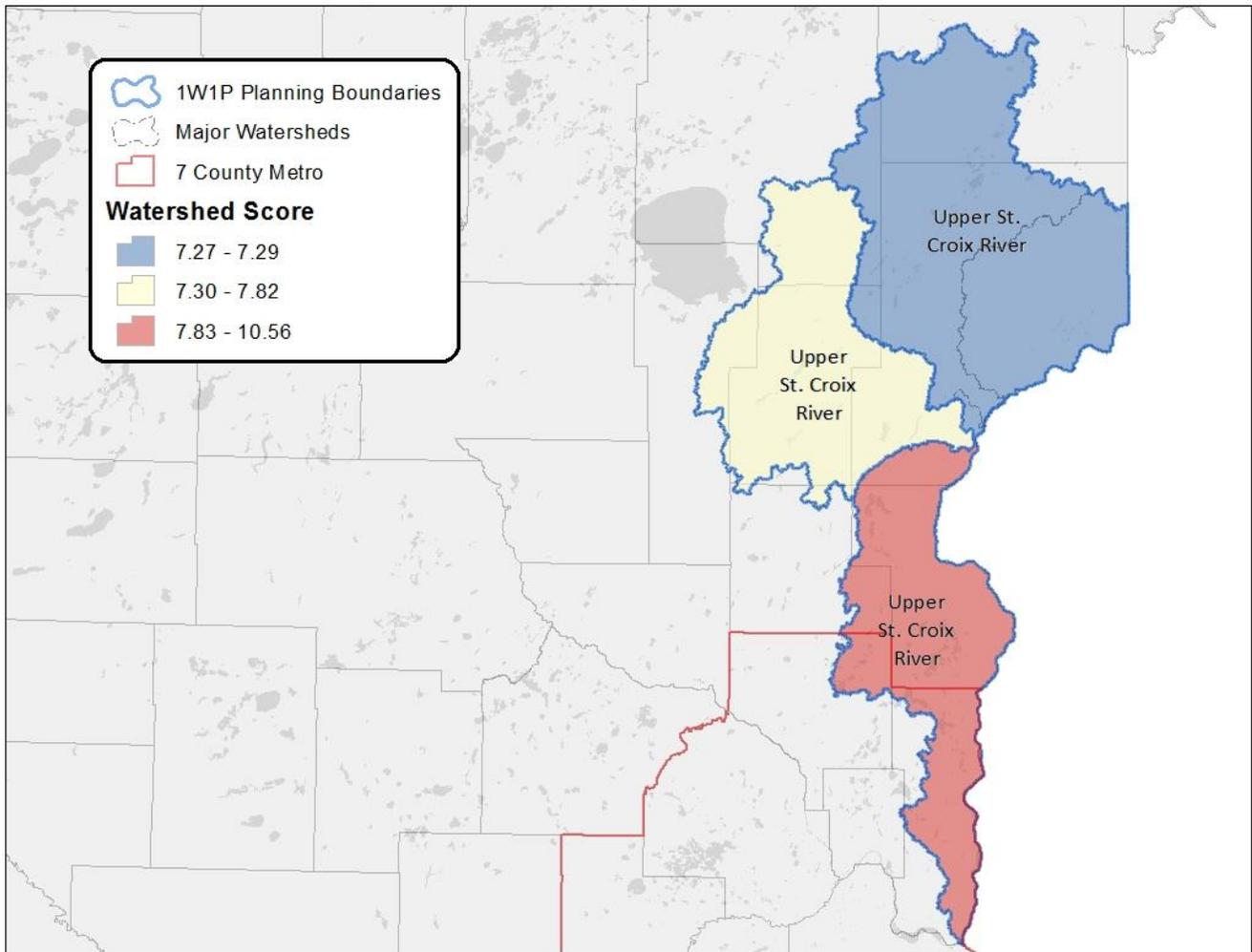
Figure III.7 St. Croix basin One Watershed, One Plan Boundaries and Local Government Units (excluding Twin Cities Metro Area)



County plan due dates are in 2016 -2023, and there are no watershed districts in the basin outside the metro area. All of the SWCDs outside the metro area adopt the county plans. The Snake River WRAPS was completed in 2014, and the WRAPS in the upper portion of the basin are not scheduled to be completed until 2020. The Lower St. Croix has a completed basin-level TMDL and smaller subwatershed scale WRAPS due to a significant portion of this major watershed crossing into the metropolitan area. Excluding the metropolitan portion, this area has the potential to go from portions of seven local water plans to three plans in the basin.

With only three planning boundaries and many plans recently updated, partnerships would need to initiate only one planning effort every third year to meet the 2025 goal. Readiness of the partners will likely have a larger influence over future planning funding decisions than application of the Watershed Assessment Tool, shown in Figure III.8. For the St. Croix Basin, the model focuses on indices that represent landuse change, water quality risk, biological significance, and percent row crops. The watershed score is only relative to the planning boundaries in the basin. See Appendix C for specific attributes used.

Figure III.8. Watershed Assessment Model Results, St. Croix Basin



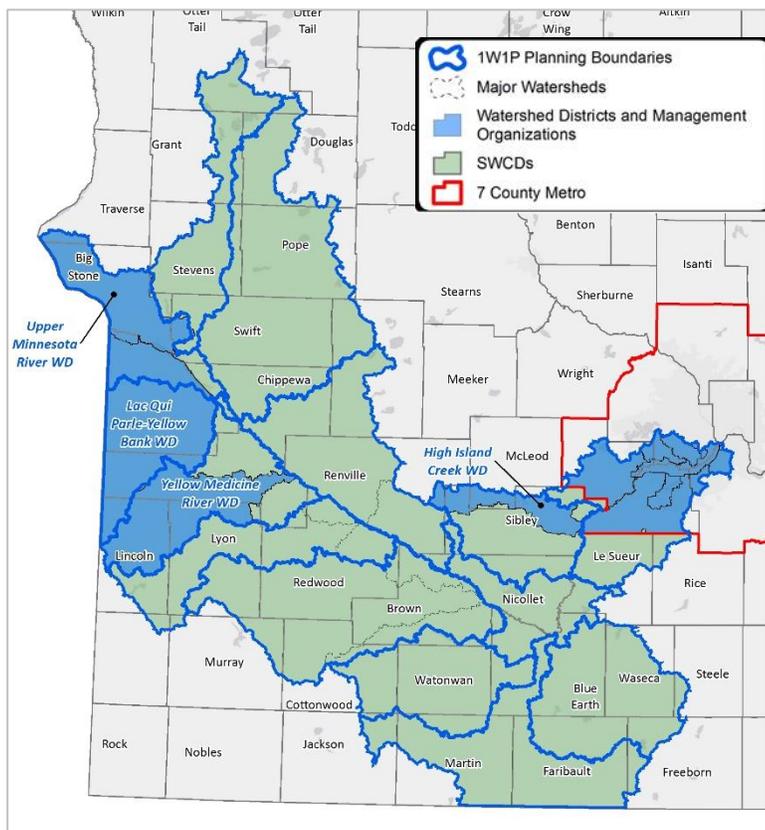
e. Minnesota River

The Minnesota River flows southeast from its source at Big Stone Lake on the South Dakota border to Mankato then northeast to join the Mississippi River at Fort Snelling. It covers approximately 16,770 square miles, roughly 10 million acres, and includes about a third of the Bonanza Valley GWMA. The basin touches 37 counties, 4 watershed districts, 13 major watersheds and 14 suggested planning boundaries.

The Minnesota River Basin is highly agricultural. Water pollution associated with concentrated animal feedlot operations, row crops, fertilizer, and erosion is of the upmost concern. Excess sediment from ravine and bluff erosion creates significant water quality and stability issues. In many areas, groundwater is threatened by nitrate contamination. The hydrology in this basin has been altered dramatically through the drainage of wetlands, the installation of subsurface tile drainage, and the channelization of streams into ditches.

A few of the suggested planning boundaries in the basin are administrative in nature and one crosses significantly into the metro area, suggesting potential opportunities for realignment. The basin no longer has a coordinated, basin-wide entity; however, two smaller organizations have expressed interest in leading the transition: Area II River Basin Projects, Inc. in the southwestern portion of the basin; and the Greater Blue Earth River Basin Alliance, which would cover the remaining portion of the basin on the south side of the river. Additionally, the Pomme de Terre major watershed has an existing Joint Powers organization between counties and SWCDs within the watershed; and the Chippewa River major watershed has a non-regulatory, cooperative partnership and citizen-based approach focused on improving water quality and watershed life in the Chippewa River and its tributaries. These existing partnerships cover about three-quarters of the basin.

Figure III.9 Minnesota River Basin One Watershed, One Plan Boundaries and Local Government Units (excluding the Twin Cities Metro)

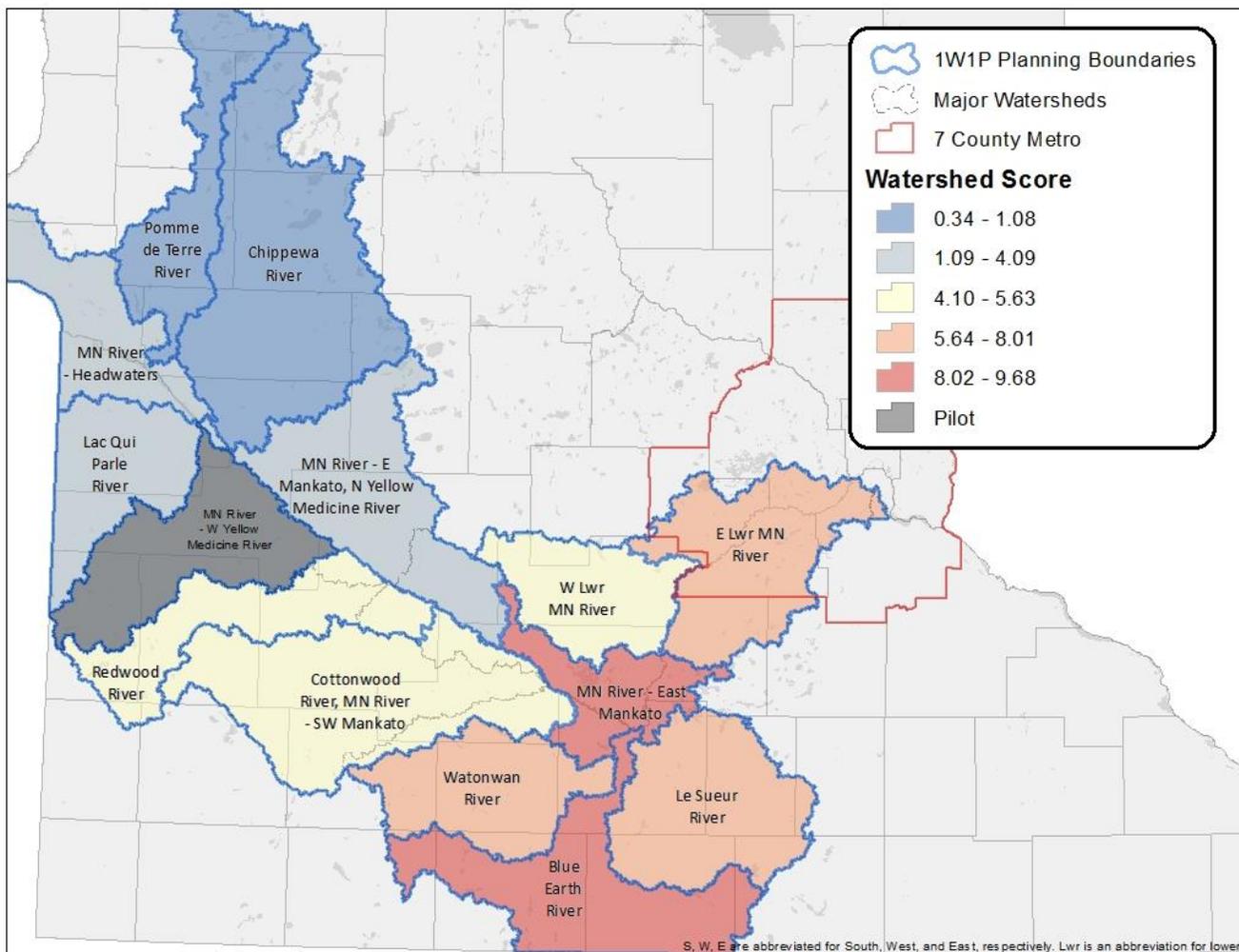


Counties on south side of the Minnesota River generally have plans expiring in the 2015 to 2018 range and the north side from 2018 to 2023. The four watershed districts in the area have plan expiration dates in 2019 to 2024. The SWCDs in the area all adopt the county water plans. WRAPS in the area range from the Pomme de Terre which was the first WRAPS written to scheduled completion dates out to 2021. This basin also includes the Yellow Medicine River One Watershed, One Plan pilot planning area, which will have a completed plan in 2016. Excluding the metropolitan area, this basin has the potential to go from portions of 41 water plans (recognizing many of these plans overlap into other basins) to a total of 14 in the basin.

With 14 planning boundaries, including the Yellow Medicine pilot, partnerships in one to two suggested planning boundaries would need to start per year to meet the 2025 goal.

Figure III.10 shows application of the Watershed Assessment Tool in the Minnesota River Basin, focusing on indices that represent drainage, nitrogen yield, soil erosion risk, percent row crops, and wellhead protection areas. See Appendix C for specific attributes used. The watershed score is only relative to the planning boundaries in the basin. The results provide additional factors for consideration in future planning funding decisions in this basin.

Figure III.10. Watershed Assessment Model Results, Minnesota River Basin

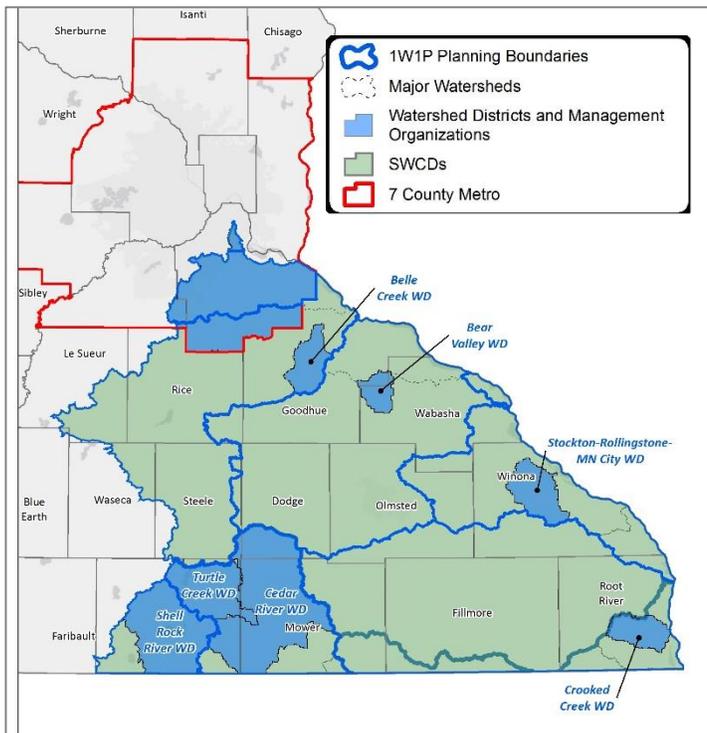


f. Southeast Minnesota, including the Lower Mississippi River Basin and the Cedar, Shell Rock, and Winnebago watersheds

The Lower Mississippi River and Cedar River basins, located in southeastern Minnesota, were combined for the purposes of this assessment. This area covers about 7,266 square miles, including all or part of 17 counties, seven watershed districts, two watershed management organizations in the metro area, 12 major watersheds, and seven suggested planning boundaries.

The Lower Mississippi River Basin is highly agricultural but with forested areas and streams in the eastern portions. Pollution associated with row crops and livestock farming is of concern. This area contains a portion of the Driftless Region and an important topographical feature known as karst. Karst topography can produce direct conduits between the land surface and groundwater aquifer, which creates concerns for groundwater contamination. This area is home to a large portion of the state’s trout habitat and is in need of protective measures to maintain adequate trout habitat. Increasing population trends are causing landuse changes along the Twin Cities to Rochester to Winona corridor.

Figure III.11 Southeast One Watershed, One Plan Boundaries and Local Government Units (Twin Cities Metro excluded)



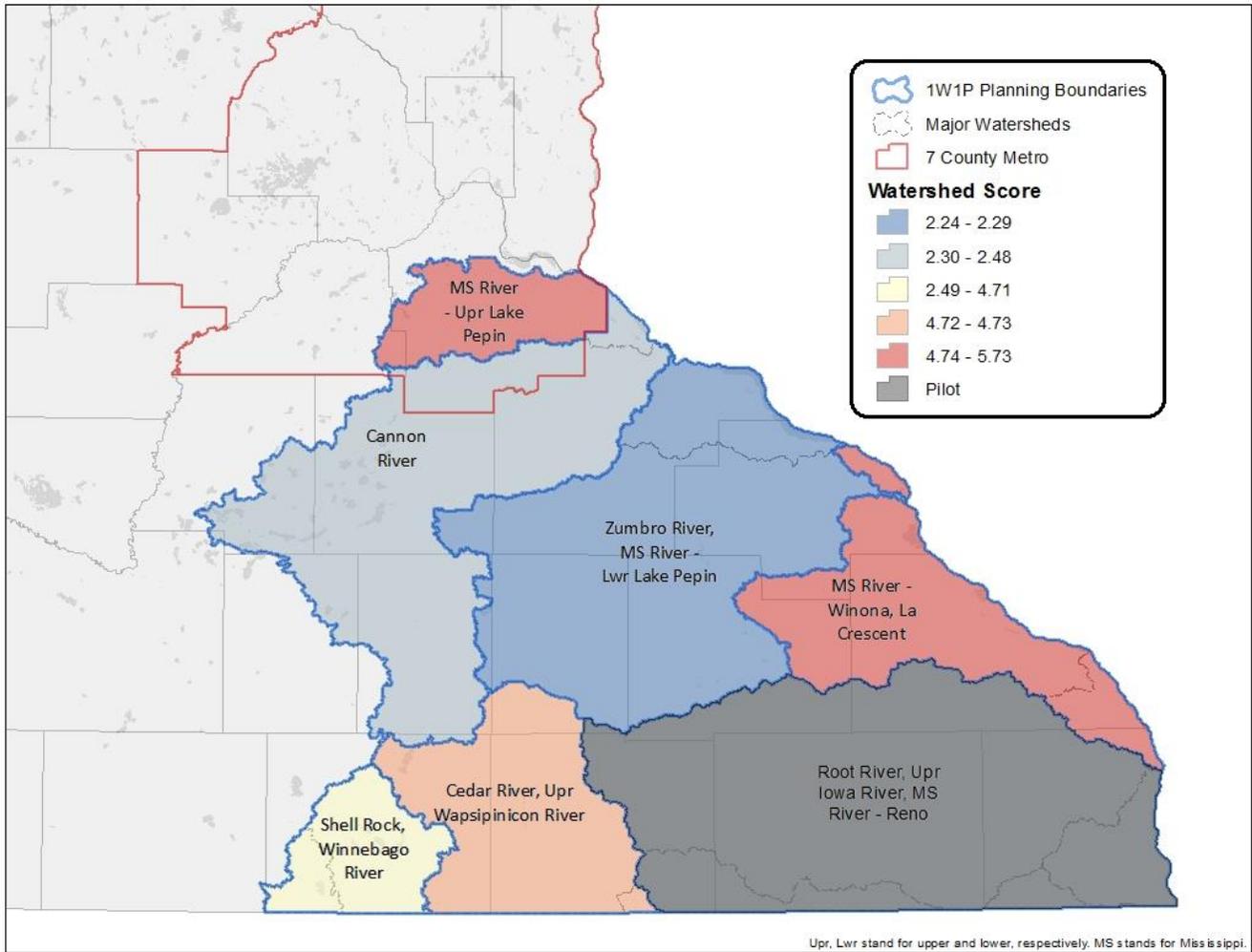
The Southeast Minnesota Water Resources Board (SEMWRB) is a ten county Joint Powers Board that exists to help sustain the quality of life in the ten counties of Southeastern Minnesota by improving and protecting the water resources through the coordination of local water planning efforts that could assist with the transition. Additionally, the Cannon, Zumbro, and Whitewater Rivers all have local watershed-based organizations interested in supporting One Watershed, One Plan.

County plan due dates within the basin range from 2016 -2020. The watershed districts’ plan expiration dates range from overdue to expiring in 2021. Outside of the metro area, all the SWCDs but one (Steele) adopt the county plans. The majority of the WRAPS in the basin are scheduled to be completed by 2016 with only some of the small direct drainages to Iowa and to the Mississippi River being scheduled for completion by 2019. This basin also includes the Root River One Watershed, One Plan pilot planning area, which will have a completed plan in 2016. Excluding the metro, this area has the potential to go from portions of 25 plans to seven plans in the basin.

With only seven planning boundaries including the Root River pilot, only one start every year or two would be sufficient to meet the 2025 goal.

Figure III.12 shows application of the Watershed Assessment Tool in Southeast Minnesota, focusing on indices that represent soil and wildlife risk, population, percent row crops and drinking water. See Appendix C for specific attributes used. The watershed score is only relative to the planning boundaries in the basin. The results provide additional factors for consideration in future planning funding decisions in this basin.

Figure III.12. Watershed Assessment Model Results, Southeast Minnesota



g. Southwest Minnesota, including the Iowa and Missouri River watersheds

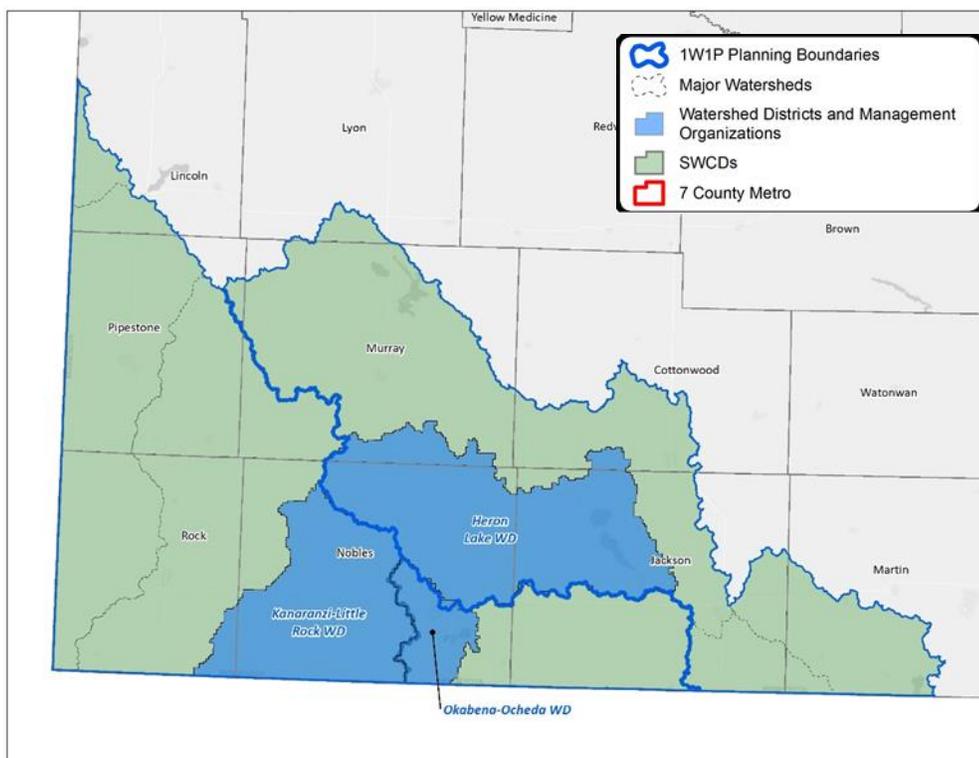
The portions of the Iowa and Missouri basins in southwest Minnesota were combined for purposes of this analysis. The Missouri portion includes the Upper and Lower Big Sioux, Little Sioux, and the Rock Rivers. The Iowa portion includes the Des Moines Headwaters, East Fork Des Moines, and the Lower Des Moines Rivers. Except for the Des Moines River Headwaters, all the watersheds in these basins are bisected by the state line. Land use in this area is predominantly row crop agriculture with some pasture and very few natural lakes. The area includes parts of nine counties, six major watersheds, three watershed districts and two suggested planning boundaries.

The South West Basin is highly agricultural with a considerable portion used for grazing. This area is part of the Coteau des Prairie, a glacial till plateau that formed between glacial lobes. The elevation of this plateau is considerably higher than the rest of Southern Minnesota, thus the flow off the Coteau into a flatter valley creates flooding issues. These issues are exacerbated by land use change and less water storage. Many of the streams are within this steeper, transition landscape, creating issues with ravine and bluff erosion. This area also contains the last remnants of Minnesota’s tallgrass prairie landscape.

County plan due dates are in 2016--2019 and the watershed districts in 2019--2022. The SWCDs in the area all adopt the county water plans. The WRAPS for the Rock, Upper, Lower, and Little Sioux Rivers are scheduled to be completed in 2016; and the Des Moines River WRAPS by 2019. The area has the potential to go from portions of 12 plans to two plans in this basin.

With only two planning boundaries, one start every five years would be sufficient to meet the 2025 goal. Additionally, with only two planning boundaries, a figure of the Watershed Assessment Tool is not provided for this basin.

Figure III.13. Southwest Minnesota One Watershed, One Plan Boundaries and Local Government Units



2. Basin Assessment Summary

In summary, transitioning to comprehensive watershed management plans across the state is feasible within ten years if funding from the state for plan development is continued and if local government and state agency staff can maintain support for the transition. Maintaining a geographic distribution of planning efforts and coordination with existing plan expirations and WRAPS development processes are methods to help manage workload associated with planning. Support of regional entities in addition to these items will influence local governments' readiness to initiate a comprehensive watershed management planning (One Watershed, One Plan) process. All of these factors are fluid; therefore, a specific schedule is not included in this Transition Plan. Table III.2 indicates an estimated pace of progress by basin. BWSR will use the readiness factors discussed in the Basin Assessments coupled with the Watershed Assessment Tool to maintain this estimated pace of progress.

Table III.2. Estimated Pace of Progress by Basin*

Start Year	Red River	Rainy & Arrowhead	Upper Mississippi	St. Croix	Minnesota	Lower Mississippi	Southwest Minnesota	total/year
2014-15 (pilot years)	1	1	1		1	1		5
2016	1	1	1		2	1		6
2017	2		1		1	1	1	6
2018	1	1	2	1	2			7
2019	2	1	2		1	1		7
2020	1	1	2		2		1	7
2021	2	1	1	1	1	1		7
2022	2	1	2		2			7
2023	2	1	1		2	1		7
2024	1			1				2
2025	Anticipate revisions of original pilot plans will start in 2025							
total	15	8	13	3	14	6	2	61

*Does not reflect an actual schedule, may move between basins, between years, and does not include two planning boundaries wholly within the Metropolitan Area.

V. Incentives for Transition

1. Funding Incentives for Transition

Primary funding incentives for local governments to transition to One Watershed, One Plan include planning grants or funding to help with the transition, and whether access to future state funds changes based on the transition to One Watershed, One Plan.

BWSR will encourage transition to comprehensive watershed management planning (One Watershed, One Plan) through funding incentives by:

1. Continued planning grants and program support. BWSR will continue to request funding to support planning grants and the One Watershed, One Plan program in order to meet the legislative goal of statewide coverage by 2025.
2. Use performance-based criteria to support planning and implementation. BWSR will use the authority granted under Minnesota Statutes, Section 103B.3369, Subd. 9 to support the development and implementation of comprehensive watershed management plans (One Watershed, One Plan).
3. Consideration of comprehensive watershed management plans (One Watershed, One Plan) in future grant allocations.
 - a. BWSR will consider status of local adoption of a comprehensive watershed management plan (One Watershed, One Plan) in future competitive grant awards.
 - b. BWSR will require adoption of a comprehensive watershed management plan (One Watershed, One Plan) by 2027 to be eligible for future competitive grant awards through BWSR, except for within the Metropolitan Area.

a. Planning Grants

The One Watershed, One Plan program was initiated in 2014 through development of a pilot program and participation of local governments in five planning boundaries. These five pilot areas tested the initial program requirements, and changes were made based on their experiences and feedback. The funding for this effort was appropriated in the 2014/2015 biennium. The 2015 legislature appropriated an additional \$4.2 million in the 2016/2017 biennium for “assistance, oversight, and grants to local governments to transition local water management plans to a watershed approach” (Session Laws 2015, 1st Special Session, Chapter 2, Article 2, Sec. 7). These funds will be used to continue to support the program and provide planning grants to additional areas. BWSR’s plan is to continue to request funding for these purposes throughout the transition period in order to meet the legislative goal of statewide coverage by 2025. If funding is not maintained, BWSR will emphasize other incentives for transition, the pace of progress may slow, and the state may not meet the 2025 goal.

Specific procedures and criteria for accessing planning funds will be developed outside this transition plan; however, BWSR will consider the factors and priorities discussed in Section IV. Initiating Plan Development in delivery of future planning grants.

b. Implementation Funds

One of the recommendations from the Local Government Water Roundtable Policy Paper discussed in the Introduction is to develop a cost-effective and equitable method for distribution of all state water management funds on a statewide basis as a foundation for implementing local priorities. The recommendation goes on to offer principles to guide development of a new framework for the allocation of state financial resources with the

intent that this framework will further the transition to comprehensive watershed management plans statewide and subsequently enhance the local capacity to implement. The recommendation includes the following principles:

- Locally identified priorities developed in participation with local, regional, state, and federal authorities should be the basis for funding. Additionally, state level activities should be guided by local needs (i.e. guidance manuals, research, education) to support local implementation.
- The funding mechanism should allow streamlined administration to maximize efficiency, minimize redundancy, and prevent duplication of efforts. However, oversight and accountability measures must also be implemented to assure public funds are being wisely used for water quality improvement.
- Local governments must contribute cash or in-kind match in order to be eligible to receive state funding.

The Roundtable's recommendations also included a formula for distribution of state water funds to local governments of fifteen percent for core watershed services, seventy percent for implementation of watershed based plans, and fifteen percent for competitive projects and programs. While the recommended formula may or may not be specifically achieved, the principles above are consistent with BWSR's direction for the overall One Watershed, One Plan program.

In addition, BWSR will use the authority under Minnesota Statutes §103B.3369, subdivision 9, to support development and/or implementation of a comprehensive watershed management plan under this section. The performance based criteria outlined in this statute may include, but are not limited to, "science-based assessments, organizational capacity, priority resource issues, community outreach and support, partnership potential, potential for multiple benefits, and program and project delivery efficiency and effectiveness." These criteria are consistent with the direction of the One Watershed, One Plan program. Additionally, as noted in the Introduction, all counties, SWCDs, and watershed districts are required to have a current plan to be eligible for state funding. BWSR will consider methods within these authorities to encourage transition to comprehensive watershed management planning (One Watershed, One Plan) and implementation, to be developed and adopted through individual grant policies.

Implementing change in the distribution of state funds requires both changes to state programs and procedures on the distribution end, and to local governments on the receiving end. A key consideration in any change must also include ensuring those transitioning later are not disadvantaged in regards to future funding. This Transition Plan recommends ongoing discussions regarding distribution of state funds and the recommendations of the Local Government Water Roundtable; however, specific or detailed strategies were not developed within the context of this Transition Plan.

2. Non-funding Incentives for Transition

Consistent with the State’s Watershed Management Policy found in Minnesota Statutes §103A.212 and the Local Government Water Roundtable Policy Paper, BWSR finds it is in the public interest to manage groundwater and surface water resources from the perspective of aquifers, watersheds, and river basins to achieve protection, preservation, enhancement, and restoration of the state’s valuable groundwater and surface water resources.

Not all incentives for transitioning to statewide comprehensive watershed management require direct financial contributions. Additionally, incentives that streamline processes may also have an indirect financial benefit through more efficient use of staff time.

BWSR will encourage transition to comprehensive watershed management planning (One Watershed, One Plan) through non-funding incentives by:

1. Streamlining current plan extension and amendment requirements within existing authorities.
2. Developing and implementing training, concentrated in the initial five years of the transition period, specifically covering skills needed to transition.
3. Committing staff resources.
4. Supporting models and tools for use by local governments to prioritize resource challenges and risks, and target implementation to produce measurable results that maximize the value of each dollar spent on watershed protection.

In the longer-term, local governments implementing comprehensive watershed management plans (One Watershed, One Plan) will see benefits such as minimization of capital costs as the result of coordinated approaches to resource challenges that cross political boundaries (e.g., flooding), decreased time and resources for retroactive coordination, and other potential efficiencies from coordinated planning.

a. Planning Incentives

By 2020, nearly every county in the state has the potential to be touched by a comprehensive watershed management plan. And if this Transition Plan is successful, the transition to comprehensive watershed management should be complete by 2025. The period in between will be difficult without additional incentives for managing and maintaining the coverage of traditional local water plans until the new comprehensive watershed management plans are in place and the planning efficiencies discussed in the section above are fully achieved.

To assist in and streamline the transition, the BWSR Board will use its authorities to “grant extensions with or without conditions of the revision date of a comprehensive local water management plan or a comprehensive watershed management plan” (Minnesota Statutes §103B.3367), keeping in mind that “extensions that substantially delay implementation of the requirements of local water plans will not be allowed” (BWSR Board Plan Extension and Amendment Policy, March 2016). Considering the variability of plan expiration and scheduled WRAPS completion dates discussed in Section IV, Initiating Plan Development, any policies for providing extensions will be flexible. However, the BWSR Board may require amendments to extended plans if new and relevant information is available that will positively impact implementation, and may consider regional extensions, such as to all local government units participating in a comprehensive watershed management planning (One Watershed, One Plan) effort. Options and opportunities for synchronizing planning efforts will continue to be discussed throughout the transition.

b. Training and Education

A primary lesson learned in the pilot One Watershed, One Plan effort is the need for additional training and education for local government staff to prepare for the transition. Some of the topic areas for training include partnership development, co-leadership, change management, team development, basic facilitation, and other soft skills. Increasing knowledge and understanding of these skills will benefit the development of the required Memorandum of Agreement between planning partners, participation in the development of the comprehensive watershed management plan, and future implementation across the watershed. To address this need, BWSR is developing a training series specifically covering these skills for participants in future planning areas. With 61 planning boundaries outside the Metropolitan Area, BWSR anticipates trainings could be offered and completed statewide within the first 3-4 years of the program at which time training needs for the One Watershed, One Plan program can be reassessed.



The Lake Superior North pilot project team evaluates boundaries at a planning meeting.

c. Agency Staffing

As the agency with oversight of local water planning and comprehensive watershed management, a portion of the appropriations available support BWSR staffing of the program. Staffing is implemented through:

- A permanent Water Plan and Policy coordinator position to provide statewide support and consistency.
- Increased training capacity, either through contract or a temporary unclassified position, specific to building necessary skills identified in the previous section. A contract or temporary position is recommended as this need is seen as highest in the first 2-4 years of the program.
- Additional two positions in the Clean Water Specialist classification so that all staff in this classification can provide focused technical support to the planning efforts and assistance with appropriate use of available models and tools to ensure prioritized and targeted plans capable of producing measureable results.
- Additional training for staff in the Board Conservationist position. These positions have a traditional role in planning oversight and administration which is not anticipated to change with One Watershed, One Plan. However, training in skills similar to those identified as needed for local government staff in the previous section is needed as is recognition of the potential for increased workload through the transition.

Support from the other agencies as identified in the Water Management Framework (Framework) is also critical to successful development and implementation of comprehensive watershed management plans. See Appendix A for the Framework which outlines the roles and responsibilities of these agencies.

d. Local Staffing

The time commitment involved for local government staff in development of a comprehensive watershed management plan is significant. This high level of commitment may drop slightly from the pilot projects to the initial planning efforts for the program; however, any substantial decreases in time commitment for plan development are unlikely until the first round of comprehensive watershed management plan updates in about 2025. BWSR intends to



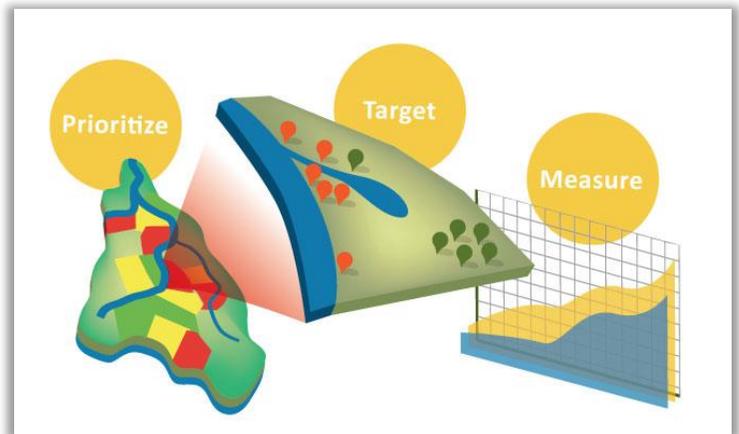
Agency staff and local staff work in partnership.

maintain no requirement for matching the planning grants as long as is feasible in consideration of this commitment. Through the pilot efforts, in kind local staff time has been calculated to be meeting or exceeding the typical 25% match requirements for grants.

Additionally, ongoing support of local staff to continue to provide coordinated leadership in plan implementation will be critical to successful implementation. This need is supported by discussions in the pilot watersheds and similar learnings of the U.S. Environmental Protection Agency outlined in the document *Top Ten Watershed Lessons Learned* (<http://cfpub.epa.gov/watertrain/pdf/tenlessonslearned.pdf>). In particular, Watershed Lesson 3 in this document identifies the importance of having a coordinator at the watershed level to provide “a focal point for the watershed effort and helps ensure that someone is paying attention to moving group activities along.”

e. Resources for Prioritizing, Targeting, and Measuring

The vision of One Watershed, One Plan is to align local water planning on major watershed boundaries with state strategies towards prioritized, targeted and measurable implementation plans. The planning process will integrate the elements of locally developed watershed plans, resource inventories and capital improvements programs with models and tools capable of prioritizing water bodies or natural resources, and the potential risks impacting that water body or natural resource. Some models are



also capable of targeting, which takes a closer look at agreed-upon priority resources and issues, and identifies specific actions, locations, and management practices for addressing the issues. Models and tools are also capable of projecting outcomes of specific actions, locations, and management practices to forecast measurable results.

Models and tools can prioritize, target, and measure at several different watershed scales. For the purposes of this Transition Plan, scales will be defined as (from smallest to largest): site, subwatershed, major watershed, and basin. While some models or tools may broadly prioritize at a major watershed scale to rank activities in one subwatershed over another, other models or tools may target down to a site-specific locations for identifying on-the-ground implementation practices. For ease of planning and for statewide consistency, BWSR is supporting the use of Zonation and the Prioritization, Targeting, and Measuring Water Quality Improvement Application (PTMApp) for identification of implementation activities which can be prioritized, targeted, and measured. These tools are in addition to HSPF model and HSPF-SAM tool supported by Minnesota Pollution Control Agency in the TMDL and WRAPS processes.

Zonation provides the framework for large-scale spatial conservation planning by identifying priority areas based on habitat quality, connectivity, and biological value of sites. Features such as biology, hydrology, water quality, geomorphology, and connectivity can be used in the model. Each feature can be weighted in the model to reflect stakeholder values. The resulting hierarchical list can then be outputted to GIS for further analysis. From here, sites can be prioritized for restoration or protection.

The PTMApp uses water quality related products derived from high resolution topographic data collected using LiDAR technology to inform the prioritization of resource concerns and target specific fields for the implementation of nonpoint source best management practices (BMPs) and conservation practices (CPs). The PTMApp will also "measure" the effectiveness of BMPs and CPs by cost and expected load reduction benefits at the resource of concern within the watershed. This application is also capable of incorporating model results from the statewide expansion of HSPF.

The HSPF Scenario Application Manager (HSPF-SAM), supported by MPCA, is a watershed scale tool that consists of GIS for subwatershed selection, HSPF to simulate the transport and fate of pollutants, and a BMP database. The

tool will assist in developing custom implementation plans by combining individual and/or suites of BMPs that are simulated and applying reduction efficiencies to the appropriate source loads represented in the HSPF model. The tool also includes a cost-effective optimization and water quality component.

While the use of Zonation, PTMApp, or HSPF-SAM is not required by BWSR in development of comprehensive watershed management plans, these are the models and tools developed by and/or supported at the state level. Other models may be used as long as they can achieve the same results for prioritization, targeted implementation, and measureable results as the state-supported models and tools. Ultimately, no matter which tools are used in the planning process, the goal is to pair up local, state, and federal priorities and to maximize the value of each dollar spent on ecosystem protection, restoration, and enhancement.

f. Future Water Management Governance

A guiding principle of One Watershed, One Plan is that “One Watershed, One Plan implementation will be accomplished through formal agreements among participating local governments on how to manage and operate the watershed.” Formal agreement in this context refers to the participating partners and processes these partners will use to write and implement a watershed-based plan, and is not intended to address or mandate consolidation or change existing authorities of local governments. The purpose of this principle is to provide assurances that decision-making spanning political boundaries is supported by an in-writing commitment from participants. This Transition Plan remains consistent with this principle.

The One Watershed, One Plan pilot areas all used a Memorandum of Agreement (MOA) between the planning partners that was sufficient for the purposes of developing the plan. However, new formal agreements will be needed for plan implementation, the format and details of which will vary by the goals of the participants with recommended overarching goals of maximizing efficiency, minimizing redundancy, preventing duplication of efforts, and clearly outlining the intent and responsibilities of the participants. At the writing of this Transition Plan, the pilot areas had not concluded discussions on agreements for plan implementation, though continuation of the MOA and establishment of a joint powers agreement or joint powers entity were all part of the discussion. The format of future agreements should be developed in consultation with legal counsel of the participants with the consideration that a joint powers agreement is recommended if the intent of is for the participants to apply for and receive state funds directly for implementation.

g. Long-Term Benefits

From a statewide perspective, moving from current, jurisdictionally-based local water plans to watershed-based local water plans will reduce the number of plans across the state. Outside of the seven county metro this means a reduction of jurisdictionally-based and overlapping local water plans to about half as many comprehensive watershed management plans. These reductions will be greatest in the areas of the state with both watershed district plans and overlapping county water plans. At a state level, the reduced number of plans and planning programs allows state staff to focus assistance on the content and goals of plans and reduces administrative time spent moving plans through procedures and approval processes. Additionally, the shift to comprehensive watershed management plans is consistent with the Water Management Framework adopted by state agencies (see Appendix A), which recognizes the efficiencies of managing water on a watershed basis.

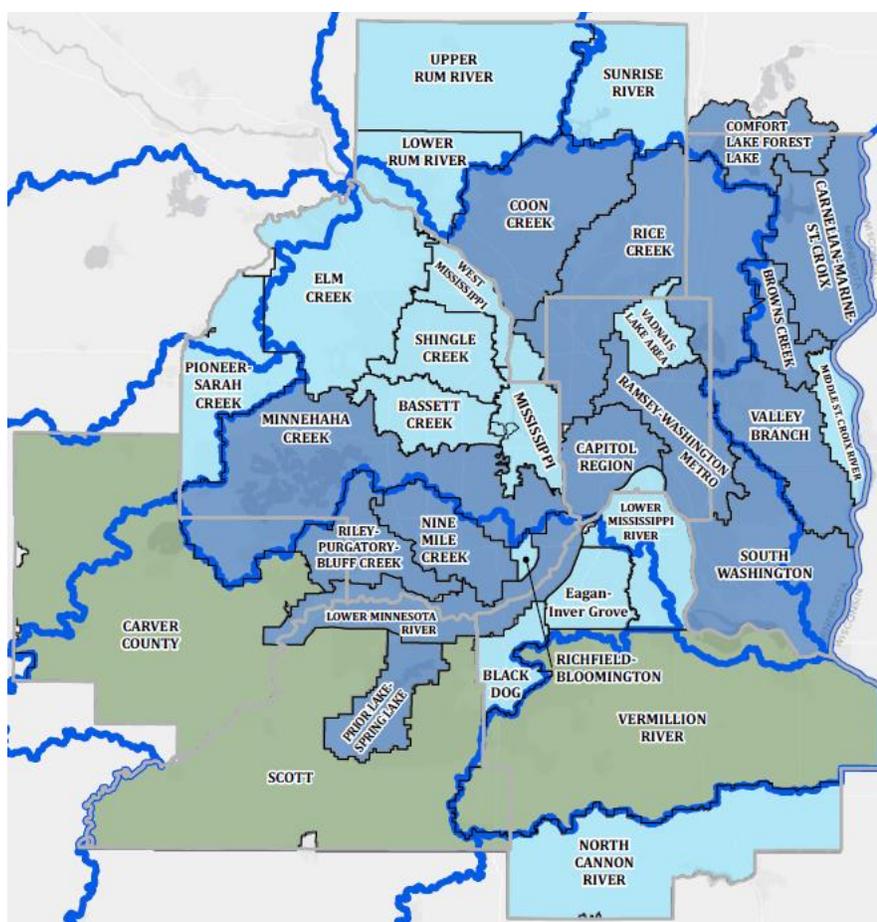
From a local perspective, the larger statewide efficiencies are more challenging to see. For many counties and SWCDs, efficiencies gained statewide have the potential to create both perceived and real inefficiencies locally. However, comparison between the status quo of existing local water management and the new paradigm of watershed-based management is not an equal or even comparison. Expectations for water management are increasing. And, the new paradigm recognizes the potential benefits with managing water quality and quantity issues with prior watershed planning and coordination across jurisdictional lines. Locally, increased time spent proactively on multiple watershed plans within a county may be offset by future decreased time spent coordinating retroactively when water quantity or quality issues are realized.

Watershed districts may more readily see the advantages of comprehensive watershed management planning (One Watershed, One Plan). Many watershed districts already span more than one county and have a history of coordinating across jurisdictions. The degree of potential change for a watershed district is less, considering its purposes. Regardless, developing a plan with multiple entities will inherently feel more inefficient to the individual entity. Local governments are encouraged to think broadly of the values of fewer water planning efforts overall within the state.

VI. One Watershed, One Plan and the Metropolitan Surface Water Management Act

Just as with the rest of the state, the seven-county Twin Cities Metropolitan Area (Metro) has a significant amount of diversity in resources and capacity. In addition, the Metropolitan Surface Water Management Act, in Minnesota Statutes §103B.201 to 103B.255 and Minnesota Rules, Chapter 8410, has provided the requirements for watershed management in the Metro since 1982. These requirements are unique to the area and more stringent than One Watershed, One Plan. Specifically, in Minnesota Statutes §103B.235, Subdivision 1, requires that local government units “having land use planning and regulatory responsibility for territory within the watershed shall prepare or cause to be prepared a local water management plan, capital improvement program, and official controls as necessary to bring local water management into conformance with the watershed plan.” Local water management in this case is connected to the comprehensive plan requirements contained in Minnesota Statutes Chapter 473, Metropolitan Government. Additionally, watershed management plans are required across the Metro.

Figure VI.1: Metro Watershed Organizations and One Watershed, One Plan Boundaries



Two One Watershed, One Plan planning boundaries are completely contained in the Metro: the Mississippi River (Twin Cities) and the portion of the Mississippi River (Lake Pepin) that is within the Metro (this major watershed is in two pieces, bisected by the Cannon River).

The Mississippi River (Twin Cities) planning boundary is consistent with the major watershed and fully within the Metro. This planning boundary includes all or portions of five Watershed Districts and nine Watershed Management Organizations (WMOs), and most of the Twin Cities urban core. This major watershed is considered

administrative in nature as it is bisected by the Mississippi River. Due to the history of watershed planning in, and complexity of the area, no specific changes to planning efforts are recommended.

The portion of the Mississippi River (Lake Pepin) planning boundary in the Metro aligns with an existing Joint Powers Agreement between Scott and Dakota Counties that forms the Vermillion River Joint Powers Organization (JPO). The hydrologic boundary of the Vermillion River does include a small portion of Goodhue County. The JPO and Goodhue County have communicated about this area in the past. One Watershed, One Plan may be a method to further these communications and coordinate management of the area.

The Metro also includes portions of six planning boundaries that span or originate outside the Metro. These include:

- The Rum River which originates in Lake Mille Lacs and flows through two WMOs in Anoka County before entering the Mississippi River.
- The North Fork Crow River which originates in Pope County and is a One Watershed, One Plan pilot area. The two WMOs within the metro portion of this planning boundary declined to participate in the pilot; however, Hennepin County has been actively involved.
- The South Fork Crow River which originates in Kandiyohi County and includes portions of two WMOs; one in Hennepin County and about one third of the Carver County WMO.
- The Minnesota River (Shakopee) which includes four watershed districts in Carver, Scott, Hennepin and Dakota counties, two WMOs in Dakota County, a portion of the Carver County WMO, and all of the Scott County WMO. This planning boundary is smaller than the major watershed and is administrative in nature as it is bisected by the Minnesota River.
- The Cannon River which includes parts of Goodhue, Le Sueur, Rice, Steele, and Waseca counties outside the Metro and one WMO in Dakota County within the Metro.
- The Lower St. Croix which includes a series of parallel drainages directly to the St. Croix River from Pine County in the north through Washington County in the south. The area includes five watershed districts and two WMOs.

Watershed management plans approved under the Metropolitan Surface Water Management Act exceed the minimum plan content standards for One Watershed, One Plan and cover the entire Metro. However, these Metro plans do not include formal agreement between the local water planning authorities when developed and; therefore, cannot substitute or replace a Metro county groundwater plan authorized under §103B.255 or a SWCD comprehensive plan under Minnesota statutes §103C.331, Subd. 11. Due to the number of local water planning authorities and the integration with city and township comprehensive planning in the Metro, any future implementation of One Watershed, One Plan is recommended to be considered on a planning boundary by planning boundary basis (see Figure II.1 on page 9). Collaboration and sharing of services across the seven county Metro line is encouraged as well as continued collaboration between the counties, SWCDs, cities, and townships within the Metro.

The most significant question remaining for the Metro is how future state funds could be equitably and more efficiently distributed, both for planning and implementation. This question will continue to be explored through ongoing discussions regarding distribution of state funds and the recommendations of the Local Government Water Roundtable. Specific or detailed strategies were not developed within the context of this Transition Plan.

VII. Appendix A - Definitions and Acronyms

Definitions

Local water plan update. Means the revision of a local water plan in whole to replace a plan that has expired (see plan expiration)

Plan approval. Means the date a local water plan was approved by BWSR.

Plan expiration. Local water plans are considered expired when: a watershed management plan required under §103D.401 or 103D.405 is more than 11 years 3 months beyond the BWSR approval date; a county water plan authorized under Minnesota statutes §103B.311 is more than 10 years beyond the BWSR approval date unless properly extended; a watershed management plan required under §103B.231 is more than 10 years beyond the BWSR plan approval date unless the plan states a lesser period of time; a county groundwater plan authorized under §103B.255 is more than 10 years beyond the BWSR approval date; and a soil and water conservation district comprehensive plan is more than 5 years beyond the BWSR approval date.

Local plan authority. For purposes of this policy, a local plan authority means: a county, soil and water conservation district, or watershed organization with authority to write and implement a local plan. County local water planning may be delegated with restrictions as per Minnesota statutes §103B.311.

Local Water Management Plan. For purposes of this policy, "local water management plan" means a plan prepared by local government units having land use planning and regulatory responsibility for territory within the watershed prepared under Minnesota statutes §103B.235.

Local water plan. For purposes of this policy, "local water plan" or "water plan" means: a county water plan authorized under Minnesota statutes §103B.311, a watershed management plan required under §103B.231, a watershed management plan required under §103D.401 or 103D.405, a county groundwater plan authorized under §103B.255, or a soil and water conservation district "comprehensive plan" under Minnesota statutes §103C.331, Subd. 11.

Major Watershed. A watershed contains all the land and water features that drain excess surface water to a specific location on the landscape. A major watershed is a cataloging unit used to classify regions into successively smaller hydrologic units. In Minnesota, there are 81 major watersheds. In many cases, these major watersheds are not a "true" watersheds but rather a delineated boundary within a larger watershed.

Metropolitan Council. "Metropolitan Council" means the Metropolitan Council created by Minnesota Statutes, section 473.123.

Plan review agencies. "Plan review agencies" means the Department of Agriculture, the Department of Health, the Department of Natural Resources, the Pollution Control Agency and the Board of Water and Soil Resources; and the Metropolitan Council if substituting for or replacing a plan under MN Statutes §103B.231.

Plan review authorities. "Plan review authorities" means the Department of Agriculture, the Department of Health, the Department of Natural Resources, the Pollution Control Agency, the Board of Water and Soil Resources, and counties, cities, towns, and soil and water conservation districts partially or wholly within the watershed; and the Metropolitan Council if substituting for or replacing a plan under MN Statutes §103B.231.

Acronyms

BWSR	Board of Water and Soil Resources
GIS	Geographic Information System
HSPF	Hydrological Simulation Program--Fortran
HSPF SAM	Hydrological Simulation Program--Fortran Scenario Application Manager
JPO	Joint Powers Organization
NPPF	Nonpoint Priority Funding Plan
PTMApp	Prioritization, Targeting, and Measuring Water Quality Improvement Application
SWCD	Soil and Water Conservation District

TMDL	Total Maximum Daily Load
WRAPS	Watershed Restoration and Protection Strategies
WMO	Watershed Management Organization

VIII. Appendix B – Watershed Management Framework

October 15, 2014

The Minnesota Water Management Framework

A high-level, multi-agency, collaborative perspective on managing Minnesota's water resources

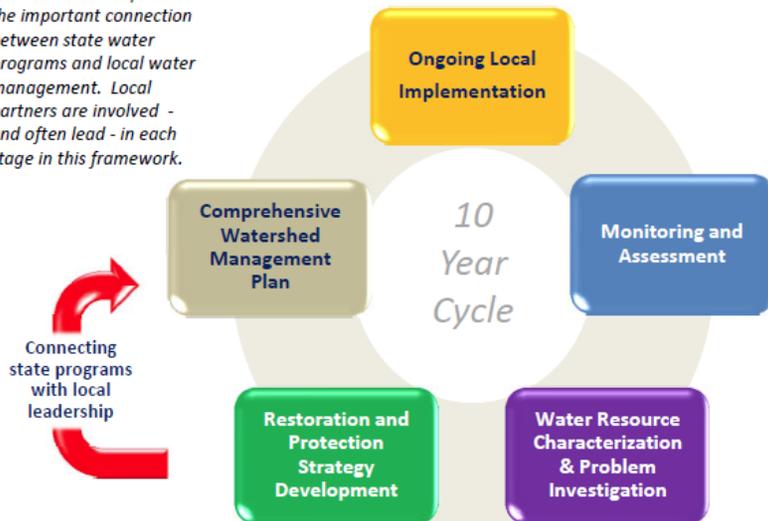


The passage of the Clean Water, Land, and Legacy Amendment is a **game-changer** for water resource management in Minnesota. Increased funding and public expectations have driven the need for **more and better coordination** among the state's main water management agencies.

The MN Water Quality Framework and the companion MN Groundwater Management Framework were developed by the agencies to enhance collaboration and clarify roles in an integrated water governance structure, so that it's **clear to everyone who is responsible** at each stage in the process, making it **easier and more efficient** for state and local partners to work together.

Goals: cleaner water via comprehensive watershed management; ensure that groundwater is protected and managed sustainably.

The red arrow emphasizes the important connection between state water programs and local water management. Local partners are involved - and often lead - in each stage in this framework.



Building on a classic “plan - do - check” adaptive management approach, the framework uses 5 “boxes” to outline the steps Minnesota’s agencies are taking toward our goals of clean and sustainable water. The agencies aim to streamline water management by systematically and predictably delivering data, research, and analysis and empowering local action.

Ongoing Local Implementation is at the heart of the state’s overall strategy for clean water. Actions must be prioritized, targeted, and measurable in order to ensure limited resources are spent where they are needed most. The rest of the cycle supports effective implementation.

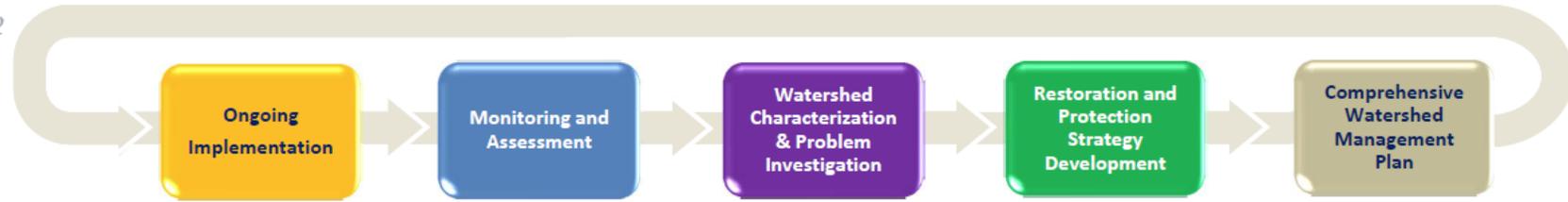
Monitoring and Assessment determines the condition of the state’s ground and surface waters and informs future implementation actions. The state’s “watershed approach” systematically assesses the condition of lakes and streams on a 10-year cycle. Groundwater monitoring and assessment is more varied in space and time.

Water Resource Characterization and Problem Investigation delves into the science to analyze and synthesize data so that key interactions, stressors, and threats are understood. In this step, watershed and groundwater models and maps are developed to help inform strategies.

Watershed Restoration and Protection Strategies (WRAPS) and Groundwater Restoration and Protection Strategies (GRAPS) include the development of strategies and high level plans, “packaged” at the 8-digit HUC scale (81 major watersheds in Minnesota). These strategies identify priorities in each major watershed and inform local planning.

The **Comprehensive Watershed Management Plan** is where information comes together in a local commitment for prioritized, targeted, and measurable action. Local priorities and knowledge are used to refine the broad-scale WRAPS and other assessments into locally based strategies for clean and sustainable water.

MN Department of Natural Resources • MN Department of Health • MN Pollution Control Agency • MN Board of Water and Soil Resources
 MN Department of Agriculture • MN Public Facilities Authority • Metropolitan Council



	Ongoing Implementation	Monitoring and Assessment	Watershed Characterization & Problem Investigation	Restoration and Protection Strategy Development	Comprehensive Watershed Management Plan
	Funding and technical assistance for locally implemented watershed restoration and protection projects	Monitor progress of local implementation goals	Conservation targeting tools (e.g., Environmental Benefits Index) BMP guidance (e.g., drainage water management)	Participate on interagency watershed teams developing WRAPS (with all agencies)	Comprehensive Watershed Management Planning (One Watershed, One Plan) Local water and watershed plans
	Appropriations and Public Waters Permitting Shoreland and floodplain management Technical assistance for projects	Stream flow Fish and plants (lakes) Mercury in fish tissue Aquifer levels (with Met Council)	Stream hydrology and geomorphology (support MPCA) Small scale watershed modeling and groundwater level modeling County Geologic Atlas	Advise on conservation actions based on holistic view of watershed health (hydrology, geomorphology, connectivity, biology, water quality)	Input on local conservation actions informed by statewide plans for prairies, forests, etc. Water supply planning and groundwater management areas (with Met Council)
	Funding for source water protection, contaminants of emerging concern Well sealing cost share	Source water and finished drinking water Bacteria monitoring on Lake Superior beaches	Guidance for contaminants of emerging concern Data analysis and modeling to support WHPA delineation and vulnerability assessments for public water supplies	Source water protection planning (identification of problems, issues, and opportunities) Well construction management	Guidance for infiltration in DWSMAs Source water protection planning (local measures and strategies)
	Loans and grants for water infrastructure projects based on priorities set by MDH and PCA				
	NPDES permit programs, SSTS compliance Grants for Clean Water Partnership, Great Lakes Restoration, stormwater and wastewater treatment (PFA)	Water chemistry (surface and groundwater) Fish and macroinvertebrates (streams) Surface water assessment grants	Stressor Identification for biological impairments Watershed Modeling (8-HUC) TMDLs Civic engagement	Stakeholder agreement on broad watershed restoration and protection strategies (WRAPS) WRAPS report – includes implementation table TMDLs to EPA	Provide WRAPS for incorporation into local plans Input on management strategies informed by statewide nutrient plan
	Ag BMP loans MN Agricultural Water Quality Certification Program Implement Pesticide and Nitrogen Fertilizer Management Plans	Pesticides in surface and groundwater Nitrate in groundwater	Research/evaluation on ag sources, practices and solutions Technical assistance on ag sources and practices, BMP demonstration/evaluation sites Stressor ID for pesticides	Ag practices and management options, nitrogen fertilizer and pesticide use Participate on interagency teams developing WRAPS Vegetative cover	Input on management strategies informed by pesticide and nitrogen fertilizer management plans
	Technical assistance and demonstration projects	Lake, stream, river monitoring: flow, chemistry, biology Effluent monitoring (WWTPs) Impervious surface and land cover assessments	Modeling and trend assessments (surface water) Pollutant load calculations Groundwater mapping and characterization	Participate in WRAPS and local water planning teams Master water supply plan Groundwater management areas (with DNR)	Participate in review of local water and watershed plans (metro area); local water supply plans; and comprehensive land use plans (metro area)

IX. Appendix C – Watershed Assessment Tool

The One Watershed, One Plan Watershed Assessment Tool was produced from the hydrologic unit code (HUC) 8 and HUC 10 Prioritization Models created as part of the University of Minnesota Sentinel Watersheds Project (2013). The tool was updated using the most current versions of publicly available GIS data layers. The sub-basins and major watershed boundaries were adjusted to correspond to the boundaries determined by the One Watershed, One Plan Suggested Boundary Map. Standardization scores were adjusted to produce a range of acceptable, similar variances within the attribute scores (variance > 0.08 but < 0.12). For more detailed information on the model methodology, refer to the MDA Final Report on the Assessment and Selection of Sentinel Watersheds (Krider et al., 2013) available at <http://water-research-library.mda.state.mn.us/pages/application/filedownload.xhtml?reclid=122825>.

Attributes used for each basin include:

Red River Basin

- Average Slope
 - Units: average slope (degrees) per watershed
 - Source: Minnesota Geospatial Data Gateway
- Drained Lands
 - Units: percent drained agricultural lands according to the land capability classification
 - Source: Jaynes and James, USDA
- Biologically Significant Areas
 - Units: percent of high/outstanding biologically significant area per watershed
 - Source: MNDNR
- Hydrologic Soil Group A/D
 - Units: percent area (sq mi/sq mi) of hydrologic soil group A/D per watershed
 - Source: NRCS SSURGO
- Q:P Ratio
 - Units: mean runoff to precipitation ratio per watershed, techniques adapted from Vandegrift & Stefan (2010) (54)
 - Sources: Lucas Stolp (UMN) and Chris Lenhart (UMN); most Q:P ratios were calculated using USGS gauging station average annual discharge (ft³) for 1986 – 2005 and area-averaged annual precipitation (inches) for 1971 – 2000 from the USDA

Rainy River and Arrowhead (Great Lakes) Basins

- Agricultural and Timber Value
 - Units: total land value for agricultural (2a) and timber lands (2b and 2c) per watershed
 - Source: Minnesota Land Economics
- Soil Erosion Risk
 - Units: mean risk score per watershed
 - Source: BWSR; based on the combination of climate, soil type, cover factor, and slope to produce a Universal Soil Loss Equation (USLE)
- Wildlife Habitat Quality Risk
 - Units: mean risk score per watershed
 - Source: BWSR; based on sites of biodiversity significance, terrestrial vertebrate models, species of greatest conservation need, potential bird habitat, wildland-urban interface habitat by protection level, CRP lands, road density, housing density
- Water Quality Risk
 - Units: mean risk score per watershed
 - Source: BWSR; Based on stream power index and proximity to water
- Impaired Streams and Lakes (inverse used for this basin)

- Units: number of different types of impairing stream or lake pollutants per watershed
- Source: MPCA

Upper Mississippi River Basin

- Population
 - Units: mean population estimate for 2030 per sq mi per watershed
 - Source: SILVIS, University of Wisconsin
- Drinking Water Supply Vulnerability Management Areas
 - Units: percent high/very high drinking water vulnerability areas per watershed
 - Source: MDH
- Landuse Change, Natural Areas to Cultivated Crops
 - Units: percent area (sq mi/sq mi) of grassland, shrub, and forest to cultivated crop per watershed
 - Source: Multi-Resolution Land Characteristics Consortium
- Landuse Change, Open/Low Development to High Development:
 - Units: percent area (sq mi/sq mi) of open/low development to high development per watershed
 - Source: Multi-Resolution Land Characteristics Consortium
- Wellhead Protection
 - Units: percent area (acres/acres) of watershed in a wellhead protection area
 - Source: MDH
- Impaired Streams
 - Units: Length (mi) of 303d and TMDL streams per sq mi per watershed, inverse used in this basin
 - Source: MPCA
- Impaired Lakes
 - Units: Percent area (sq mi/sq mi) of 303d and TMDL lake area per watershed, inverse used for this basin
 - Source: MPCA

St. Croix Basin

- Water Quality Risk
 - Units: mean risk score per watershed
 - Source: BWSR; based on stream power index and proximity to water
- Wildlife Habitat Quality Risk:
 - Units: mean risk score per watershed
 - Source: BWSR; based on sites of biodiversity significance, terrestrial vertebrate models, species of greatest conservation need, potential bird habitat, wildland-urban interface habitat by protection level, CRP lands, road density, housing density
- Landuse Change, Natural Areas to Cultivated Crops
 - Units: percent area (sq mi/sq mi) of grassland, shrub, and forest to cultivated crop per watershed
 - Source: Multi-Resolution Land Characteristics Consortium
- Landuse Change, Open/Low Development to High Development:
 - Units: percent area (sq mi/sq mi) of open/low development to high development per watershed
 - Source: Multi-Resolution Land Characteristics Consortium
- Biologically Significant Areas:
 - Units: percent of high/outstanding biologically significant area per watershed
 - Source: MN DNR
- Row Crop
 - Units: percent area (sq mi/sq mi) of corn and soybean per watershed
 - Source: USDA (Croplands Data Layer, 2010)

Minnesota River Basin

- Drained Lands
 - Units: percent drained agricultural lands according to the land capability classification;
 - Source: Jaynes and James, USDA
- Nitrogen Yield
 - Units: incremental nitrogen or phosphorus yield delivered to the Gulf of Mexico (load per acre per watershed)
 - Source: SPARROW, Nitrogen and Phosphorus Pollution Data Access Tool, EPA (2002)
- Soil Erosion Risk
 - Units: mean risk score per watershed
 - Source: BWSR; based on the combination of climate, soil type, cover factor, and slope to produce a Universal Soil Loss Equation (USLE)
- Row Crop
 - Units: percent area (sq mi/sq mi) of corn and soybean per watershed
 - Source: USDA (Croplands Data Layer, 2010)
- Drinking Water
 - Units: length (mi) of 1B & 1C streams per sq mi per watershed
 - Source: MN DNR

Southeast Minnesota, including the Lower Mississippi River Basin and the Cedar, Shell Rock, and Winnebago watersheds

- Soil Erosion Risk
 - Units: mean risk score per watershed
 - Source: BWSR; based on the combination of climate, soil type, cover factor, and slope to produce a Universal Soil Loss Equation (USLE)
- Wildlife Habitat Quality Risk:
 - Units: mean risk score per watershed
 - Source: BWSR; based on sites of biodiversity significance, terrestrial vertebrate models, species of greatest conservation need, potential bird habitat, wildland-urban interface habitat by protection level, CRP lands, road density, housing density
- Row Crop
 - Units : percent area (sq mi/sq mi) of corn and soybean per watershed
 - Source: USDA (Croplands Data Layer, 2010)
- Drinking Water
 - Units: length (mi) of 1B & 1C streams per sq mi per watershed
 - Source: MN DNR
- Population Density Estimate
 - Units: mean population estimate for 2030 per sq mi per watershed
 - Source: SILVIS, University of Wisconsin

Southwest Minnesota, including the Iowa and Missouri watersheds

- Soil Erosion Risk
 - Units: mean risk score per watershed
 - Source: BWSR; based on the combination of climate, soil type, cover factor, and slope to produce a Universal Soil Loss Equation (USLE)
- Drained Lands
 - Units: percent drained agricultural lands according to the land capability classification
 - Source: Jaynes and James, USDA
- Row Crop
 - Units: percent area (sq mi/sq mi) of corn and soybean per watershed
 - Source: USDA (Croplands Data Layer, 2010)

- Wellhead Protection
 - Units: percent area (acres/acres) of watershed in a wellhead protection area
 - Source: MDH