January 25, 2021

Fellow LSC Policy Committee Members,

As the Agenda does not allow time for discussion on the 2021-2022 Work Plan, our Watershed District has a few comments we would like on the record for discussion at a future meeting. If after discussion the Collaborative agrees, we can do a future course correction under our adaptive management operating guidelines.

The comments we have deal primarily with making certain the work plan is tightly focused on the agricultural sub-watersheds that will deliver the biggest Phosphorous (P) load reductions to the St. Croix River. The main contributor to that load is the Sunrise River as concluded in prior studies; specifically, the Army Corps of Engineers/Chisago County Sunrise River Report, the MPCA Sunrise River TMDL report and Report on Progress, and the Lower St. Croix Research Station Report. All of the target areas are influenced by surrounding agricultural areas and/or degraded wetlands that have been identified in all studies as the major contributor of P to the Sunrise and St. Croix Rivers – for example, agricultural land use represents 21% of land use in the LSC Basin, but is responsible for 55% of P load to the St Croix River.**1** These sources are also primarily located in areas of lower population that need the most assistance in funding projects.

We are pleased the Planning and Steering Committees have used the information from prior studies to focus much of the work in those areas, however we would encourage the Collaboration to concentrate *all* LSC 1W1P Watershed focus on water quality projects based on the priority lakes’ sub-watersheds listed in Table 5.3, page 82 of the LSC final plan, and provided for reference on page 3 of this letter.

By concentrating on the seven (7) highest Phosphorous (P) load areas – those above 1,000 lbs. of P contribution - we will bring the LSC Watershed to a 96% reduction of P by eliminating 26,237 lbs. of P per year and 13,118,500 lbs of algae growth, in the first 10 years of our basin wide 1W1P.

Let us focus on targeting those highest (P) nutrient load areas first, using prior study findings and monitoring data, and supplementing with diagnostic monitoring as needed, to pinpoint locations for remediation. By approaching our projects with surgical precision, we will dramatically move the needle on cleaning up the LSC pollution loading to the St. Croix River. Meeting the reduction goal in our first 10 year comprehensive plan period will prove to the public that Clean Water Funds are important - and can be used wisely - toward achieving success in water quality, and provide the success story needed to encourage the reauthorization of the Legacy Amendment.

The lower contributing, or more diffused contributing sites, should be assigned as local projects, funded through traditional SWCD, County, and Watershed District funding sources, and implemented as local projects through local staffs.\* The LSC Collaborative would then be singularly focused on the largest contribution sites until we have the Phosphorous loading to the St Croix resolved.

(\* See Table 2, page 7, and Figure 5 map and table, on page 11 of the 2015 MPCA Progress Report on TMDL Study of Lower St Croix River, only 17 (1.9%) of the 888 NRCS (National Resource Conservation Practices) projects completed between 2011-2015 listed any pollution reductions. Chisago County SWCD reported the following: P=78.82 lbs/yr, S=84 tons/yr, and N428 lbs/yr. (Phosphorous, Sediment and Nitrogen))

The Army Corps of Engineers Sunrise River Report\* recommended concentrating initial work on restoring critical wetlands\*\* as they would provide the biggest and quickest return on lowering P loading to the Sunrise and St. Croix Rivers. They stated individual farm BMP practices are good, but would take many years to complete and to show any benefits on a basin scale. We agree with that conclusion.

*(\*See Figure 4 map, pg 9, and Figure 5 map, pg 14) \*\*(See Executive Summary on page 3.)*

Chisago County SWCD has recently received direct funding from the Clean Water Fund through BWSR for several of the sub-watersheds discussed in the LSC 1W1P, so that is great news, as those projects will address several of the largest P loading sub-watersheds.

Funding was also recently approved for Washington County Conservation District to hire the Agronomist and to fund the hiring of a Communications Specialist to expand the EMWRAP program with concentration on implementing MIDS, BMP standards, and other education programs throughout the LSC. We suggest initially concentrating these efforts in the targeted sub-watersheds with the largest P loads, so we are covering all aspects of the restoration effort through both project work and program work. The program work can expand to other areas by providing materials and training to LGU staff and enlisting their assistance in distributing the LSC messages to those communities outside the first tier targeted areas. We also expect the Agronomist will be a fully certified, qualified, and experienced person in this specific specialty area with experience in managing and teaching in the science and principle of Tolerable soil loss.\*

\*All ag structural BMPs must require that the cropland itself be managed at the Tolerable soil loss level of “T” or below so as to achieve the 10 year design life expectancy of these projects.

By targeting all our efforts in the highest prioritized zones first\*, we will deliver high outcomes with amazing speed. Our success will open many opportunities for additional funding and will deliver a message of success in achieving water quality outcomes sought by the public and Legislators – and which is needed for renewal of the Legacy Amendment. We have to show results that the focused funding provided by the Legacy Amendment is being used wisely, if we are to maintain any hope of it being renewed. And, it is important to remember the Legacy Fund is meant to be additional to local, traditional funding, and not used as a substitute for local funding.

(\*See on page 3 of this letter, the chart from page 82 of the LSC Plan, listing the high priority lakes with the highest P loads. Those loads also represent the lake’s direct drainage subwatersheds, which correlates to the high load sub-watersheds identified in the comprehensive Army Corps of Engineers report, identifing the Sunrise Subwatershed as the highest in both Phosphorous (P) and Sediment(S) loading. This subwatershed includes drainage from the Chisago Lakes LID, the convergence of flows from the Southern and Western Sunrise River Branches and the DNR managed Carlos Avery Wildlife Areas, which contain a series of dams that are listed in the report as high load contributors. We can work on refining these areas as the Collaboration refines its focus to a highly targeted approach to planning.)

Finally, with the award of nearly $1.4 million in recent new funding to the Chisago SWCD and the Washington Conservation District for work outlined in the LSC 1W1P, we are proposing that $500 million of the $800 million in Clean Water Fund (CWF) grant money shifted to the LSC 1W1P from the metro area watershed organizations, be set aside specifically for metro area projects. Those water organizations with implementation ready projects could then submit proposals for review by the LSC Collaboration, with proposals scored using our Matrix format for competitive access to those Clean Water Funds.

On behalf of the CLFLWD, we respectfully submit our comments for consideration,

Jackie Anderson

Stephen Schmaltz

**Footnote1: From MPCA Report on TMDL Indicators**

Water quality is a reflection of how people use the land draining to a lake or river. Pollutants flow with water through drainage tiles and ditches, stormwater and wastewater pipes, and run off from developed and agricultural areas. Techniques, such as buffers along streams, controlled drainage, and rain gardens can reduce the flow of pollutants to streams and lakes. Stressor identification is complete for 27 watersheds across the state. Different stressors are more prevalent in various regions of the state. Many of these differences can be attributed to the dominant land-use practices and disturbances in the respective regions.



**reprinted & highlighted**

**Sunrise River Report, Chisago County, Army Corps of Engineers**

**Executive Summary**

A watershed study was performed for the Sunrise River Watershed, including all areas upstream of the Sunrise River confluence with the St. Croix River. The study focused on priority water resource issues identified through collaboration with Chisago County, Minnesota Pollution Control Agency and stakeholders. This included evaluating existing conditions for water quality; aquatic habitat; wetlands presence and historical loss; geomorphic conditions; and groundwater/surface water interactions. The potential for future development was assessed, including the potential impact of future land use on phosphorus and sediment loading. Various land use scenarios were considered to assess potential for reduced future phosphorus loading from the watershed. Finally, recommendations were made to direct future watershed management. A brief summary of findings include the following:

The Sunrise River was believed to be one of the largest relative contributors of phosphorus and sediment to the St. Croix River. While this study suggests loading contributions may not be as substantial as originally thought, the watershed is still an important contributor of phosphorus and sediment to the St. Croix. Northern and eastern parts of the watershed appear to contribute the greatest sediment and phosphorus loading to the watershed. Tributaries such as the West Branch and South Branch Sunrise also have high phosphorus concentrations. Rivers that flow directly to the St. Croix provide the greatest loading to downstream areas, while rivers that flow through lakes, impoundments and wetlands likely have at least some of their loads trapped.

Intensive watershed monitoring was performed to assess stream health. Stream areas with the best overall health included the Sunrise River below approximately Kost Dam. The North Branch was generally of moderate health, with several locations that met standards for biotic health, but a couple locations that resulted in scores below standards. Streams with poor health included the upper Sunrise; as well as the West Branch and South Branch Sunrise. Some of these impairments in the upper watershed may be due not only to poor habitat and water quality, but also a loss of connectivity caused by several dams.

To augment stream habitat assessments, a geomorphic assessment was conducted on key tributaries. In addition to helping describe existing stream and river habitat, the assessment documented baseline conditions of key geomorphic criteria. Aquatic habitat loss also was described through review of historical wetland conditions. The watershed currently has 75,851 acres of wetlands. Historically, the watershed may have contained about 103,000 acres of wetlands, suggesting a loss of over 27,000 acres of wetland since European settlement. The most dramatic changes have occurred in the far northern and eastern portions of the watershed.

The watershed study evaluated potential changes in water quality resulting from future land-cover and wastewater loads as a result of projected population increases. It also assessed options to reduce phosphorus and sediment loading to the Sunrise River. This included assessing the ability to meet future loading goals identified in the Lake St. Croix Total Maximum Daily Load Study (TMDL; 2012). The TMDL identified goals of annual phosphorus loading reductions from the Sunrise to the St. Croix River of about 8,300 kg/yr (33% reduction).

The conditions that were assessed included:

1. Projected future water quality conditions (future without any actions).
2. Loading conditions with modified agriculture land use practices
3. Loading conditions with modified urban land use practices
4. Loading conditions with wetland restoration actions

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A Soil and Water Assessment Tool (watershed model known as SWAT) was configured to the watershed. Potential land use changes were projected based on total population increases of about 32% by 2020; and 54% by 2030. From the 2000s to 2030, phosphorus loads to rivers and lakes in the watershed would increase by 7%, while the total phosphorus load at the mouth of the Sunrise increased about 5%.

The land use conditions identified above were evaluated for their potential to meet the phosphorus reduction goals of the Lake St. Croix TMDL. For agricultural practices, actions such as vegetated filter strips and grassed waterways show promise for loading reductions. However, to get the most benefit, these would be required on most ag lands, which requires some land loss to implement these features (potentially 2 to 3% loss per feature). Measures to reduce soil phosphorus also could have substantial reductions, but would take many years to be recognized, and would require reduced fertilizer applications in the years before and after.

For urban practices, the SWAT model proved ineffective at assessing how well urban changes would reduce loading. That doesn’t mean urban practices should be completely ignored. However, they need further evaluation to gain a better understanding of just how effective they may be.

For wetland restoration, the potential to reduce phosphorus loading appears considerable. Modeling suggests that increasing wetlands downstream of the Sunrise River North Pool by 25% and 50% would reduce phosphorus loading to the St. Croix River by about 9% and 19%. Increasing wetlands in the Chisago Lake Improvement District by 25% and 50% reduced loading to lakes by about 11% and 19%.

Basic recommendations are included for protection of water resources, with a focus on water quality. Recommendations include actions that can be undertaken by stakeholders including improved land use and property management, smart development, stormwater management and other activities. Improvement measures in the lower watershed would have a systemic effect to the St. Croix River. Improvements in the upper watershed would have more localized, site-specific benefits.

While this study provides suggestions to potentially meet future objectives, the reality is that environmental conditions and stakeholder priorities change over time. Any of the recommendations in this report should be revisited and considered collaboratively by basin stakeholders moving forward. Stakeholders should work together to refine watershed priorities and management actions to meet these priorities. Their efforts should also include monitoring to evaluate the effectiveness of various actions. Ultimately, successful watershed management can only be done collaboratively and adaptively over time to meet changing conditions. This study provides the baseline for beginning this process, but basin stakeholders must take the initiative to work together on challenging issues to move forward toward improving environmental quality in the Sunrise River Watershed.

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