



MEMO

To: Advisory Committee

From: Freshwater, Tetra Tech, and EOR

Date: January 11, 2021

Subject: Preparation materials for the January 2021 Advisory Committee meeting

Our January Advisory Committee meeting will provide an opportunity for the committee members to review the issues that are emerging from existing plans and studies, submitted comment letters, and the public kickoff survey. Specifically, you will be asked to review the language being used to describe the issues, how overarching concepts are being incorporated, add insights from your own experience, and begin thinking about what will need to be considered in prioritizing the issues against each other.

Issues have been aggregated into the following areas:

- Surface water quality
- Altered hydrology
- Groundwater
- Habitat
- Land use
- Social capacity

In addition to the individual issues statements listed above, we also propose the integration of equity, resilience, wild rice, and impacts to Lake Superior as overarching components that each issue impacts or is impacted by. We will plan to discuss this in more detail at the January meeting.

Please review this packet in full, and come to the meeting having already thought about (and even written out answers to) the questions posed below for each issue statement. Doing so will make sure there is sufficient time for you to react to the information AND provide feedback in conversation with other Advisory Committee members.

- What do you like about the issue statement?
- What do you dislike?
- What do you think might be missing, or what questions does this bring up for you?

1. Surface Water Quality

Issue statement:

The quality of water in the lakes, wetlands, streams, and rivers in the St. Louis River Planning Area is threatened by a wide variety of pollutants that impact ecosystem health as well as human health. Concerns include legacy contaminants, current pollution, as well as emerging or potential future pollution. Protection of high quality waters as well as restoration where degradation has taken place is needed.

Other specifics of note:

- Mercury contamination poses a risk to critical species, cultural needs, the environment, and public health. Furthermore, the conditions that allow for the methylation of mercury also need to be addressed.
- Pharmaceuticals, hormones, plasticizers, anti-corrosives, chlorides, and polyfluoroalkyl substances have all been identified as substances of emerging concern.
- Drinking water obtained from surface water sources needs protection.
- Where wastewater treatment plants exist, there are concerns about capacity constraints, leaky infrastructure, and other challenges which all directly impact surface water quality.
- High-impact activities, industries, and land uses threaten surface water quality.
- Sediment, phosphorus, nitrogen, bacteria, and a long list of other contaminants and impairments contribute to surface water quality degradation. (See attached listing from the public kickoff.)
- Many seasonal homes are being converted to full-time residences, resulting in increased stress on the lake from shoreline development and septic systems.
- Noncompliant and failing septic systems are present, along with challenges in identifying and paying for repair these systems, throughout the planning region.
- There is considerable public interest in protecting species (such as wild rice) and ecosystems (such as wetlands and forests) because of their role in helping clean surface water and/or signaling to humans how existing activities are damaging water quality before it is too late.

2. Altered Hydrology

Issue statement:

Climate change, land development, ditched streams, drained wetlands and peatlands (and other loss of water storage), and land uses that increase or change patterns of runoff are contributing to flooding, changes in flow regime, increased flashiness, and higher peak flows. These changes in turn lead to increased in-stream erosion, destabilization of streambanks, degraded water quality, reduced baseflow, and stress on aging infrastructure and failure of infrastructure not designed for the extreme weather events associated with a changing climate. There is a need to protect natural features such as wetlands that preserve water storage while also working to restore the altered hydrology in the St. Louis River Planning Area. Additionally, impoundments, dams, and reservoirs designed to provide flood management and energy generation may also impact stream connectivity, fish passage, erosion, and water quality.

3. Groundwater

Issue statement:

Groundwater varies in quality throughout the St. Louis River Planning Area. Potential risks include: unused and unsealed wells, composition of aquifers surrounding wells, urban pollutants, density of private wells, arsenic, agricultural and lawn care nutrients, hazardous wastes and chemicals, human and animal waste, and alteration of land through development. For groundwater-sourced drinking water, people are not always aware or testing opportunities or results for private wells, support of systematized testing is needed, and treatment options or alternative supplies can be expensive or non-existent.

Groundwater quantity is also of concern as it relates to ecosystem health. The overall health of the St. Louis River Planning Area relies on the interaction between groundwater and surface water, which is especially true for cold-water habitats for trout and other critical species. Ecosystem health can be impacted by changes in biology, connectivity, geomorphology, hydrology, and water quality that result from development, mine related activities, and climate change. There is a need for more information to better protect and restore that interaction.

4. Habitat

Issue statement:

Land use change, existing uses, climate change, invasive species, stream connectivity challenges, and sources of pollution can stress, reduce, or fragment ecosystems and threaten water quality. There is general concern about loss of biodiversity and the impact of that impact on whole ecosystems. There is a need to protect unique, high quality terrestrial and aquatic habitat and connectivity—especially for sensitive or threatened species. Restoration, along with proper management of working lands, is also needed to support healthy and functioning ecosystems.

5. Land use

Issue statement:

Everything that happens on land impacts water. To different extents, historic and current land uses have altered hydrology, degraded habitat, impacted groundwater resources, and degraded water quality, in addition to other impacts. Mitigating the extent to which current land uses contribute to challenges, while preemptively providing protection or guidance for future land use changes affecting water, is needed.

Other specifics of note:

- **Development:** New development can threaten habitat and water quality, especially when done without mitigating impacts in previously undisturbed areas, wetlands, and near shorelines. However, not all communities have sufficient resources or capacity to engage in the best and most current practices with land use and stormwater planning. Additionally, built-up areas have impervious surfaces that contribute to increased volume and pollutants. Further effort is needed to reduce existing stormwater pollution and effectively prepare for upcoming water quality and quantity challenges due to changes in weather with climate change and future development.
- **Ore/Taconite and Copper-Nickel Mining:** Legacy, existing, and future pollution from mining is of great concern to local communities due to the toxic and ecosystem-altering impacts of discharge and runoff. Additionally, mining has dramatically altered natural hydrology, most significantly in several headwater watersheds. Protection of water resources is needed for existing mines, and requirements for any new mining operation should be held to a standard such that these projects would not pose irrevocable harm to water quality, ecosystems, and human health.

- **Aggregate Mining:** Mining of aggregate, such as sand and gravel, occurs throughout the planning area. Mining activities in the watershed frequently occur in areas that also function as recharge areas for groundwater, which can impact the baseflows that feed nearby streams and local and regional aquifers. Aggregate operations can also increase levels of sedimentation and harm water quality.
- **Forests:** Loss of old growth forests, forest fragmentation, encroaching development, poorly managed or overharvested working lands, fire, invasive species, and climate change all reduce the ability of forested lands in the watershed to improve water quality, hold water, sequester carbon, and provide habitat.
- **Agriculture:** Row crop production within the watershed is limited, but hay farming and livestock production are significant in certain areas and sometimes near water resources. Streambank erosion, nutrient and sediment enrichment, and bacteria loading can be side effects of livestock access or proximity to streams and rivers. Looking to the future, increases in industrial agriculture and confined feedlots operations that may result from climate and land use change are also of concern, and there is a need to support small farms in adopting conservation practices.
- **Recreation and Tourism:** Water- and land-based recreational activities can impact the quality of lakes and streams, stress wildlife, degrade habitats, and lead to conflict between different uses (i.e. motor boats vs kayaks). At the same time, other environmental impacts can limit recreational opportunities and negatively impact the local tourism economies, which are important resources for the area and have the potential to grow without adversely impacting the environment.

6. Social Capacity

Issue statement:

Everyone in the watershed has a role they can play to protect and care for water. On the individual level, there is a need for increased awareness, financial and technical support for behavior change, empowerment, and opportunities to be involved in restoration as well as monitoring and evaluation. Additionally, protection of habitats and recreational spaces that can inspire a conservation ethic are needed in order to truly support increased stewardship of the watershed.

At the governmental level, collaboration and consistency (in standards and enforcement of standards and regulations) across different units of government is needed. This is challenged by barriers around communication, planning, data collection (and sharing), monitoring, outreach, and educational activities. There is also a need for funding as well as technical and capacity support for local governments. Current efforts are already constrained, and new responsibilities will require additional support. The impacts of political polarization and the pitting of environmental concerns against industry also need to be acknowledged and addressed.