

# SAND HILL RIVER ECOSYSTEM RESTORATION PROJECT TEAM MEETING

Location: Sand Hill River Watershed District, Fertile, MN

Date: January 29, 2025

Time: 10:30AM – 12:00PM



## Participants

April Swenby (SHRWD), Karl Tollefson (Scandia Township Supervisor), Craig Engelstad (Landowner & SHRWD), Mark Stola (Landowner), Moriya Rufer (HEI), Zach Herrmann (HEI/SHRWD), Alex Engelstad (Liberty Township Landowner), JJ Hamre (landowner), Jeremiah Gudvangen (Liberty Township), Nicole Bernd (West Polk SWCD), Molly Costin (MPCA), Henry Van Offelen (BWSR), Brett Arne (BWSR), Mike Kelly (DNR), Nathan Olson (DNR – Fisheries), Nick Kludt (DNR – Fisheries), Stephanie Klamm (DNR – Hydrologist)

## Meeting Summary

### Project Team Process

The meeting began with an overview of the Project Team process. Moriya Rufer, the facilitator, presented that the Project Team is advisory to the Project Sponsor (Sand Hill River Watershed District). The Project Team can contain anyone who is a stakeholder, permitter, or potential funder of the project (state and federal agencies, townships, local governments, local landowners, etc.). All members of the Project Team are expected to bring their thoughts and express concerns at each meeting.

The Project Team's goal is to provide interagency and stakeholder review to the flooding problems along the Sand Hill River, and develop a recommended alternative for consideration of the SHRWD Board of Managers. With representation from a broad array of regulatory and local interests, the recommended alternative will be technically feasible, locally acceptable, and permittable. The Project Team process can take one to two years or longer depending on the complexity of the problems and solutions, to develop a project concept to present to the SHRWD.

The SHRWD Board of Managers can either accept the recommended alternative, send it back to the Project Team, or halt the Project Team. Assuming the recommended alternative is carried forward, the Project Team will continue to function through more detailed design to ensure technical feasibility, permit-ability and local acceptance, and provide input on grant funding opportunities.

## Objectives

Zach Herrmann provided a review of the Purpose and Need for the project, which was formally adopted by the SHRWD Board of Managers in May 2024. The project focuses on reducing flood damages that include loss of private property due to bank failures, public safety risk along 440<sup>th</sup> Street (Sections 25 & 26, Reis Twp. And Section 30, Liberty Twp.), overland flooding of ag land, and roadway overtopping.

In addition to the problems the project aims to address, opportunities to other resource concerns will be considered, including water quality, habitat, and recreation opportunities. While not a focus of the project, design features that benefit these concerns may provide an opportunity for additional outside funding.

The goals of the project are defined in six stated objectives, listed as follows:

- Objective 1: Minimize Loss of Adjacent Private Property
- Objective 2: Enhanced Public Safety Along 440th Street SW
- Objective 3: Reduce Roadway Overtopping During Spring Flooding
- Objective 4: Reduce Breakout Flows During Spring Flooding
- Objective 5: Mitigate Downstream Adverse Flood Impacts
- Objective 6: Incorporate Other Resource Opportunities Where Applicable

Objectives will be used as a measure of alternatives, as necessary, to evaluate adherence with the adopted Purpose and Need.

## Preliminary Alternatives Discussion

Herrmann discussed the alternatives development process. Alternatives are evaluated on alignment with expected outcomes, technical feasibility, permit-ability, and local acceptance. Alternative evaluation began during the March 4, 2024, Project Team meeting, and was further refined during the September 4, 2024, Project Team meeting. Alternatives will continue to be refined based on comments from this meeting. In total, we anticipate several additional meetings will be required before a recommended alternative can be presented to the SHRWD Board of Managers.

### Two-Stage Channel

The two-stage channel alternatives were scaled back to only include the project extents east of MN State Highway 9. Two alternatives for the two-stage channel were evaluated; the first provides a 330-foot floodplain width, and the second provides a 100-foot floodplain width. Both assume that the current ditched channel below the floodplain would remain largely unchanged. Roads would be moved away from the channel using excavated material from construction of the floodplain. The 330-foot floodplain width would require approximately 2.8 million cubic yards of excavation and an estimated 300-acres (inclusive of the existing ditch channel). The 100-foot floodplain width would require approximately 0.6 million cubic yards of excavation and an estimated 150-acres (inclusive of the existing ditch channel). The excavated floodplain under both scenarios would be seeded with perennial vegetation, and the resulting higher hydraulic retardance is a critical component for flood flow attenuation downstream of the project. The impacts of both conditions were reviewed using approximate excavation extents overlaid on aerial photography.

Hydraulic modeling was completed to assess potential for adverse impacts downstream. The 10-year summer rainfall scenario and the 100-year spring runoff scenario were analyzed. Flow hydrographs from modeling results were presented for the following conditions:

1. US Army Corps of Engineers As-built Conditions (1950s)
2. Pre-Riffles and Pre-Fish Passage Conditions (2015)
3. Current Conditions (2024)
4. Proposed 330-foot wide two-stage channel east of MN State Highway 9
5. Proposed 100-foot wide two-stage channel east of MN State Highway 9

The modeling results suggest that minor benefits are provided from flood storage provided by the 330-foot floodplain width, however benefit is less apparent using the 100-foot floodplain width. Project Team members suggested that a “sweet spot” may exist for the floodplain width between the two analyzed scenarios.

### **Temporary Storage**

At the request of the Project Team in September 2024, potential storage sites were identified adjacent to the project extents. Herrmann stressed that the identified sites were conceptual in nature and only identified based on storage potential derived from LiDAR data. No analysis of inlet/outlet feasibility, landowner acceptance, or environmental impacts was completed as part of the identification. Four total storage sites were presented to the project team, all located east County Road 213, where topography seems to lend itself to reasonable storage volumes relative to depth and acres impacted. Each of the identified sites generally varied from 2,000 acre-feet to 5,000 acre-feet of flood storage potential.

The conclusion of this analysis suggests that flood storage potential exists but will likely come at an impact to land in agricultural production. The Project Team discussed the storage alternatives and would like additional information on the potential benefit to west of Highway 9. If reasonable, landowner engagement would be the next step.

### **Measures West of MN Highway 9**

Several on the Project Team expressed concern that not enough was being done west of MN Highway 9 to address their issues specific to snow plugging during spring flooding. Herrmann suggested that the hydraulic model would be used to assess benefits to differing channel geometries. The sentiment of the Project Team during the September 2024 meeting was channel work further west may not be feasible due to the high excavation quantities, however changes in channel cross section may assist in reduced snow plugging depth and opening in the spring.

The Project Team also discussed snow removal from the channel west of MN Highway 9 to assist with reduced spring flooding. Other Watershed Districts that provide snow removal on drainage systems were referenced. Several project team members thought this would have potential to alleviate spring flood concerns. By creating a “pilot channel” through snow and ice, several project team members suggested it would assist in opening the channel quicker than has recently been experienced. This does also come with some additional logistic considerations, including timing and amount of removal, potentially difficult or impossible access conditions, liability on the SHRWD if removals are not able to be performed, and others. A strong operating plan would be required to ensure all these considerations are addressed.

## **Path Forward**

Next steps for the Project Team include the following:

- Assess flood reductions from varying storage amounts to determine if, and how much, storage is effective.

- Develop a revised two-stage channel floodplain width east of MN Highway 9 that balances anticipated earthwork required for flood storage.
- Assess benefit from channel cross section modifications west of MN Highway 9.
- Consider snow removal options west of MN Highway 9.

Once results are compiled, the Project Team will meet to discuss. The next project team meeting is anticipated in March 2025.

## **Additional Information**

To see Project Team information such as past meeting minutes and studies, visit

[http://www.sandhillwatershed.org/Project\\_Team.html](http://www.sandhillwatershed.org/Project_Team.html)