Young Environmental Consulting Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Madison Jeseritz
Katy Thompson, PE, CFM

Date: October 16, 2020

Re: Trout Streams Gaps Analysis and Long-Term Management Plan Site Visit

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As approved by the Lower Minnesota River Watershed District (LMRWD or District) at the May 20, 2020, board meeting, Young Environmental has been working on developing the Trout Streams Gaps Analysis and Long-Term Management Plan draft for partner review. Several meetings have been held with project partners from the U.S. Fish and Wildlife Service and the Minnesota Department of Natural Resources (MnDNR). At the last project partner meeting on September 28, 2020, it was suggested the project team and partners walk the site along Kennealy's and Harnack Creeks to come to a consensus on creek names and alignments in this area. This portion of Eagan has a long history of intensive agricultural development that has altered stream patterns and alignments significantly, where not even the MnDNR staff is in agreement regarding the naming and locations of some of the unnamed streams.

October 13, 2020, Field Visit

On October 13, 2020, the District administrator, staff from Young Environmental, and Mark Nemeth (MnDNR) met at 3725 Nicols Road to review Unnamed 1/Harnack Creek, Unnamed 3, Unnamed 4, Black Dog Creek, and Kennealy's Creek in the field. Mark provided the history of the area and individual sites based on his analysis of historical aerial photography.

This region used to be intensively farmed, primarily for onion production, in the early 20th century because the soils are soft, and the streams provided ample irrigation waters. Over time the area has experienced significant ditching and diking as well as

commercial operations for sand harvesting and fishing. Black Dog Creek once flowed west of Cedar Avenue and then east to Black Dog Lake/Minnesota River, but now with the construction of Cedar Avenue, it is separated from its historical headwaters.

The MnDNR identified this area as potential trout waters in the 1960s and surveyed Kennealy's and Eagle Creeks. Staff from the MnDNR did not visit Unnamed 1, 4, or 9 because they did not feel, at the time, that those streams had the potential to support trout; however, with the construction of Cedar Avenue in the 1980s, the MnDNR realized the rarity of these cold-water streams and designed them as trout waters for future protection.

The creek referred to as "No Official Name" below is a tributary of Unnamed 4. It is a gully that once flowed directly to Nicols Marsh through a culvert under the railroad. It is suspected that the city or Union Pacific railroad plugged the culvert and realigned the tributary to flow east to Unnamed 4 to protect the track from overtopping when the city began discharging stormwater flows into the gully area.

Mark mentioned that Unnamed 7 is the least disturbed of all the unnamed streams and has the best plant community; however, it does not have enough flow to support trout fisheries.

The team walked west from the meeting site to Unnamed 1 through 4, then reconvened at the meeting site before walking east to Kennealy's Creek. Mark mentioned that when Cedar Avenue was constructed about 40 years ago, the excavation material was placed on the adjacent hill, which has damaged the native plant community and has eroded down the hill into the trout stream area. Attempts have been made to prevent the material from moving down the hill, including installing containment boxes, but many of those have failed, which affected the springs and surrounding natural area. The group then walked to Kennealy's Creek before concluding the site visit. The following is a high-level summary of the findings in the field.

Unnamed 1 (Harnack Creek)

- The creek flows under the railroad through an approximately 42-inch-diameter concrete culvert.
- In 2015, the flow was measured and seems to be consistently 1 cfs year-round. Flow at time of visit is estimated to be between 1 and 3 cfs.
- On the south side of the railroad tracks, there is rarely beaver activity. The soil is dark loam, sand, and peat on the south side.
- The north side has more substrate as well as sand.
- The area is experiencing more frequent flooding.

Unnamed 3

- Unnamed 3 flows under the railroad culvert bridge to Black Dog Lake.
- This site was visited in April 2020, and the temperature was taken. It was warm by the lake, but the temperature drops when the sun goes away.
- The culvert bridge is falling apart and degraded.

Unnamed 4 (Naas Creek)

- Unnamed 3 flows under the railroad bridge to Black Dog Lake.
- There was high flow, good substrate, and good habitat. The confounding factor is the water source. The railroad company placed new rocks.
- The stream backs up into the pond.
- There are bluffs and gullies by Unnamed 4 on the south side.
- There were unused pieces of pipes on the north side, sitting in the grass.

Tributary to Unnamed 4 (No Official Name)

- The black culvert goes underground; parts of it are suspected to disconnected, and it might not be functional.
- At the time of observation, water was discharging from the culvert into the tributary.

Kennealy's Creek

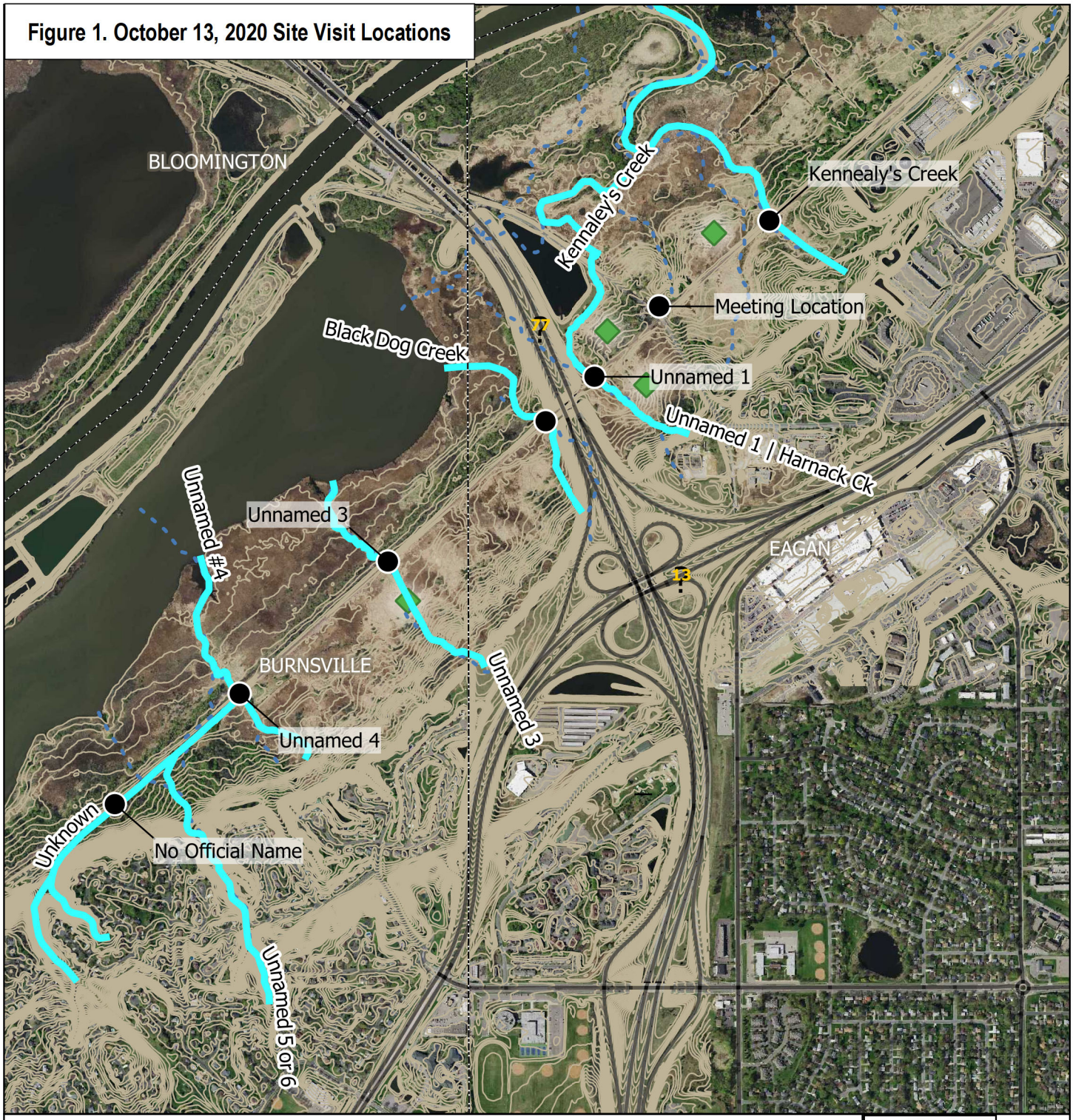
- Kennealy's Creek had high flow at the time, but Mark said it is about half of what was observed in the winter.
- Watercress was abundant, along with healthy ferns.

Attachments:

Figure 1—Site Visit Locations

Site Visit Photographs

Figure 1. October 13, 2020 Site Visit Locations



LEGEND

- 10/13/2020 Site Visit Locations
- LMRWD Trout Streams
- Trout Stream Historic Alignments
- Calcareous Fens
- High Value Resource Area Overlay District
- Steep Slopes Overlay District
- Dakota Co. 2-ft contours
- Public Waters
- Public Waters
- LMRWD Boundary
- Cities, Townships, Unincorporated Areas
- Major Roads

0 400 800 ft

LOWER MINNESOTA RIVER WATERSHED DISTRICT

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October 13, 2020 Field Visit Photos

Figure 1. Upstream view of Unnamed 1

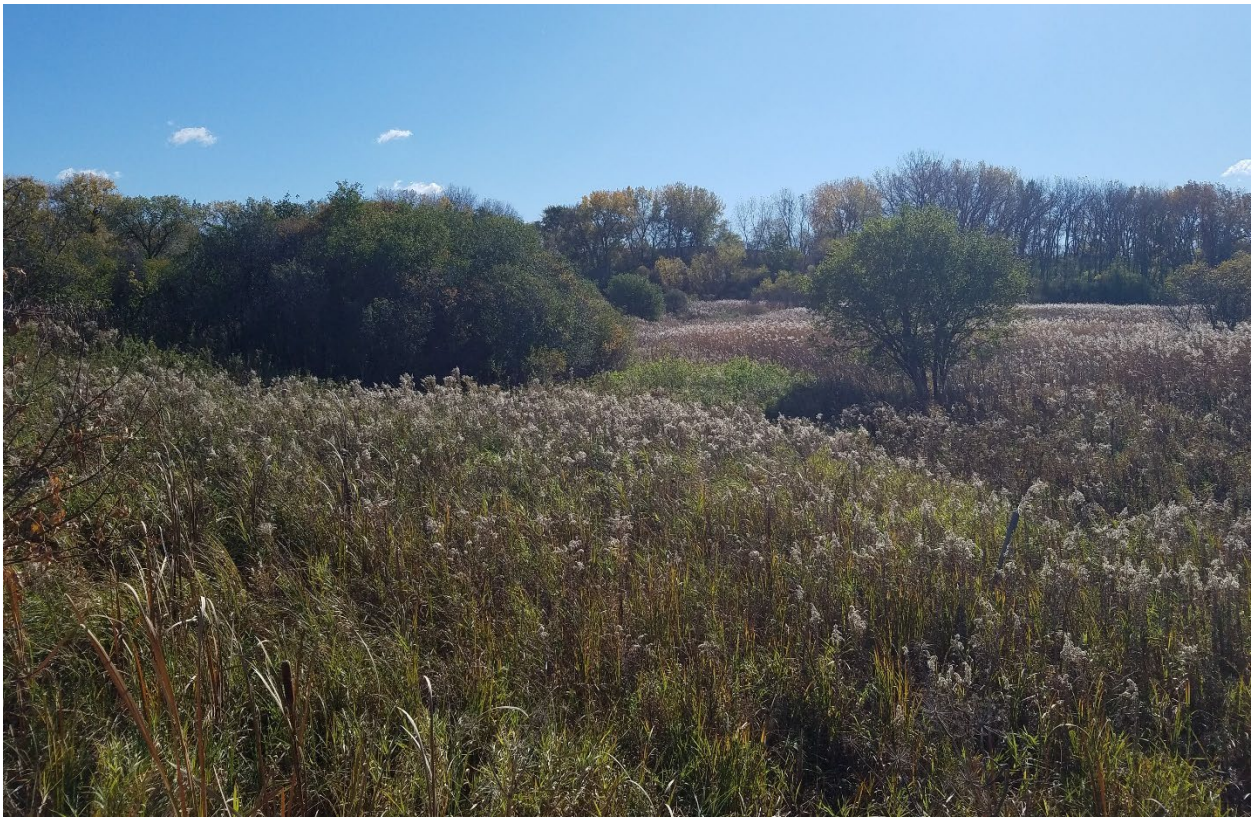

Figure 2. Downstream view of Unnamed 1

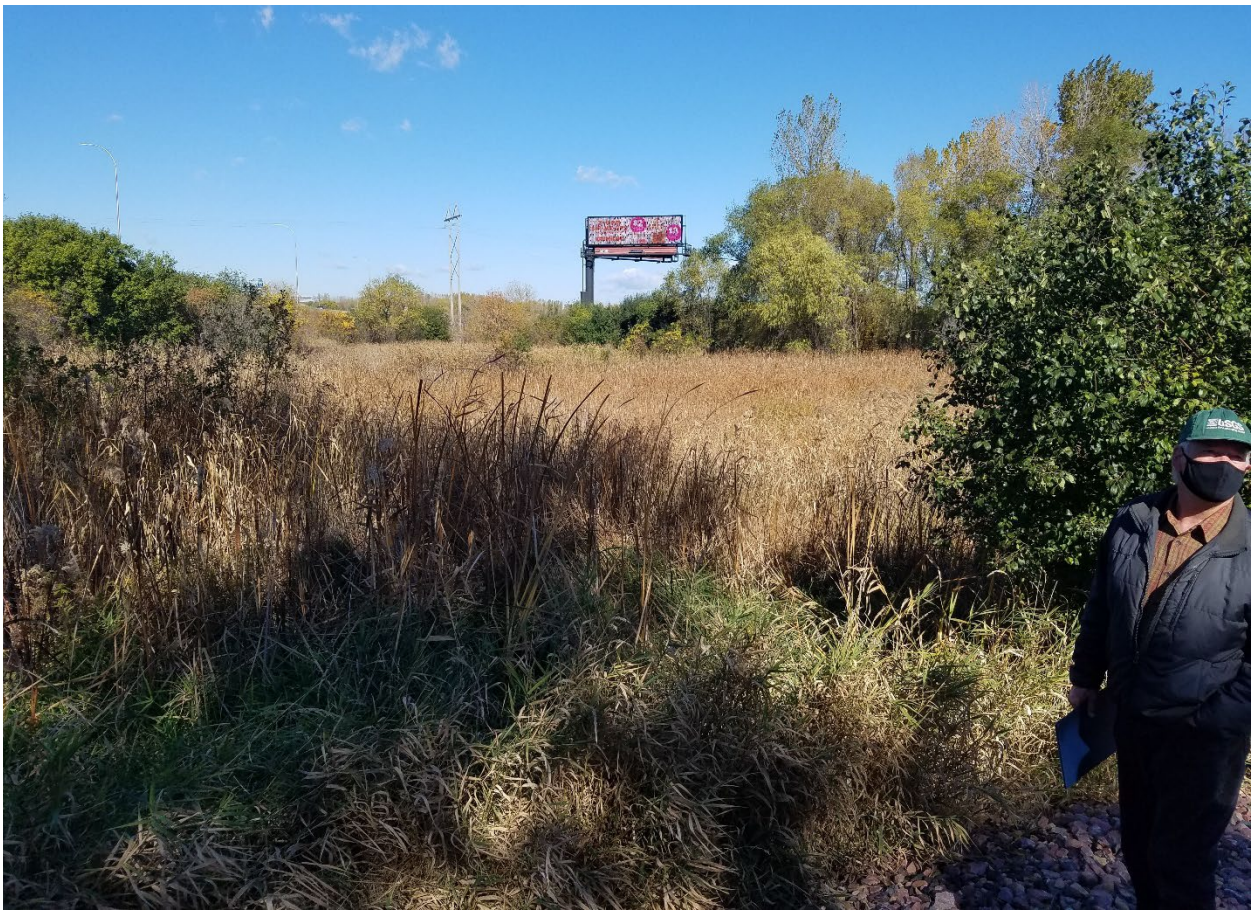

Figure 3. Upstream view of Black Dog Creek

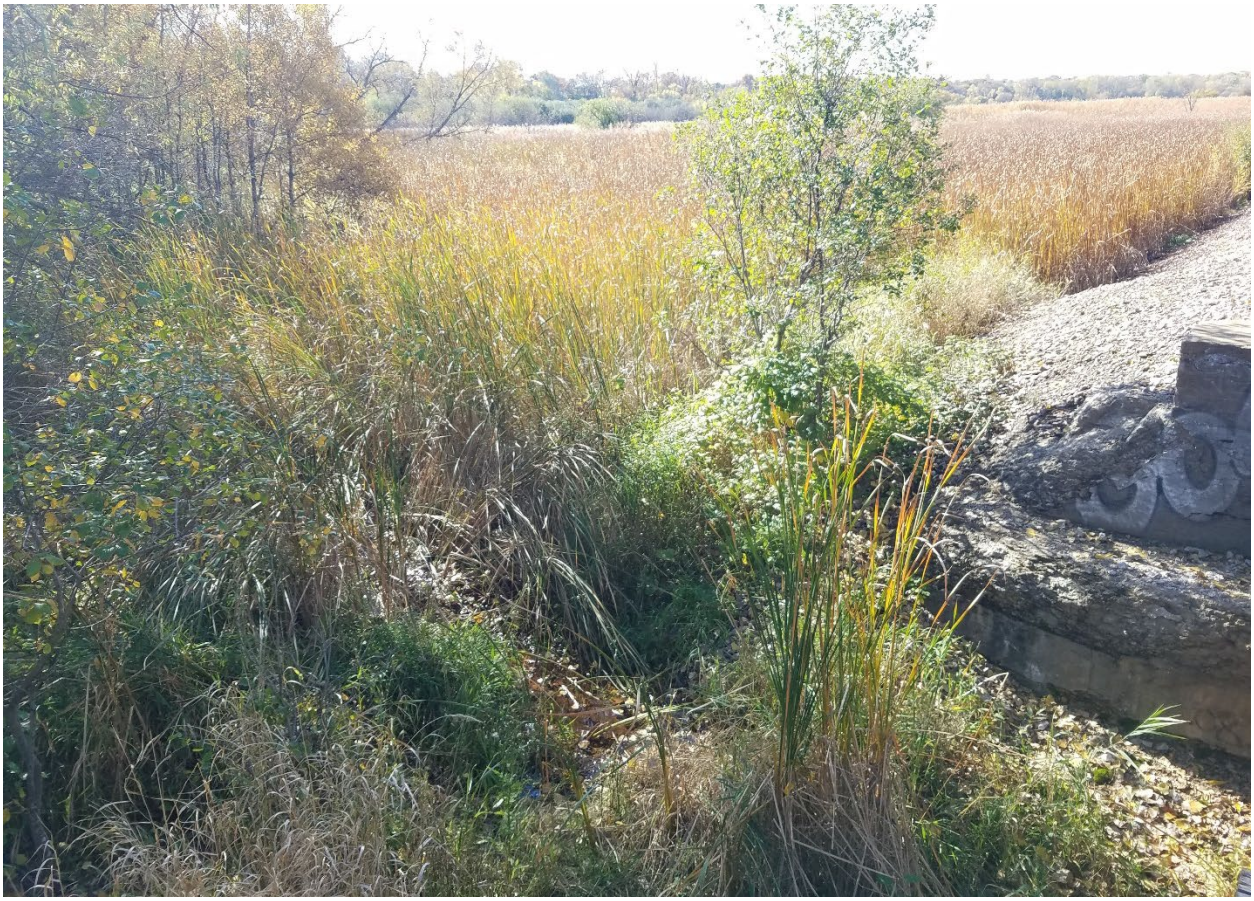

Figure 4. Downstream view of Black Dog Creek

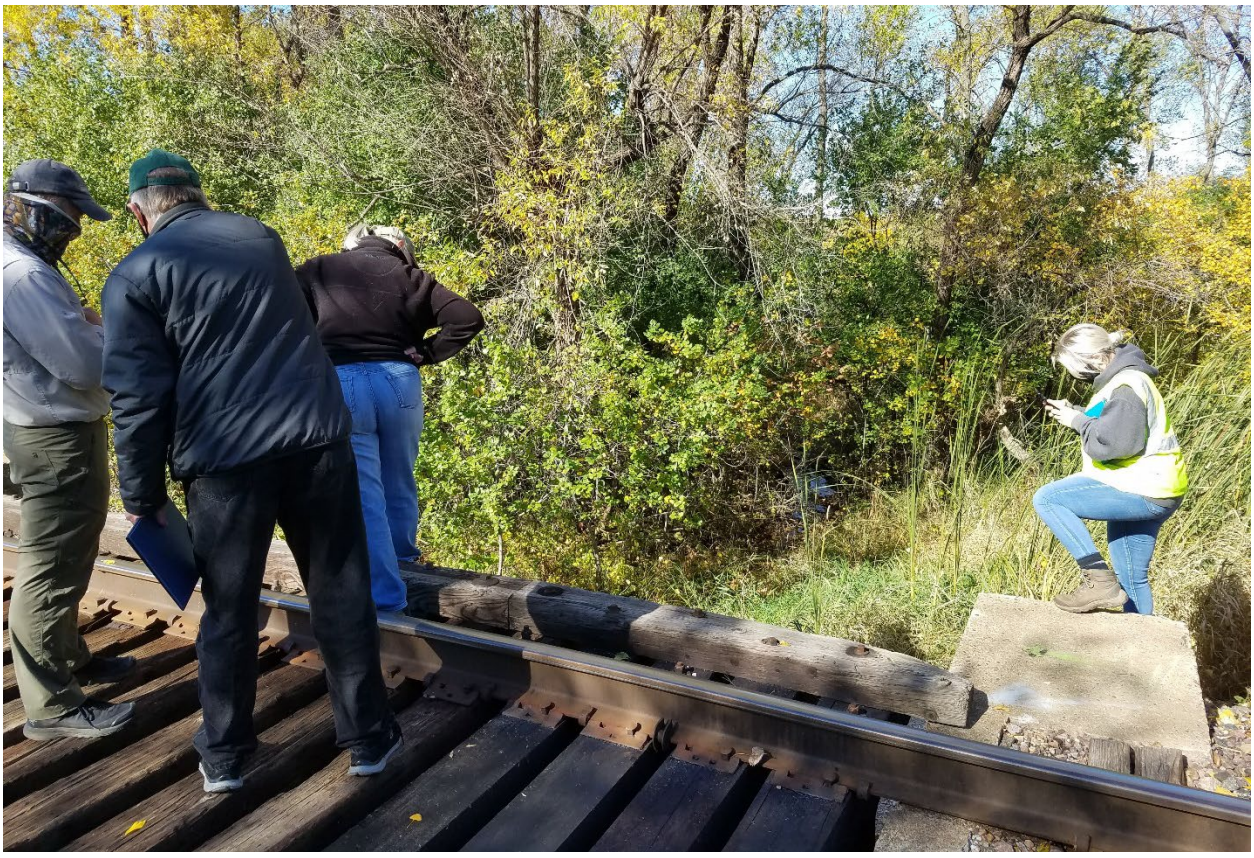

Figure 5. Upstream view of Unnamed 3

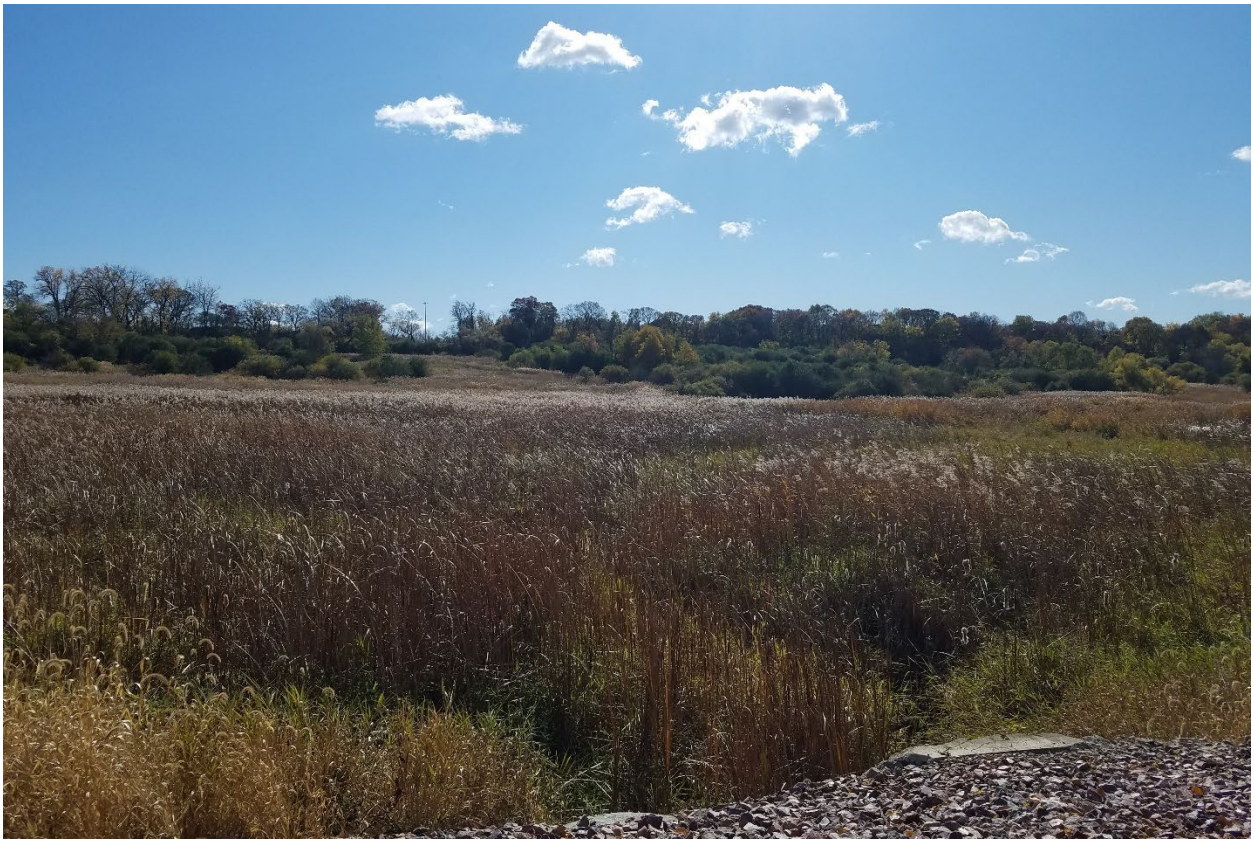

Figure 6. Downstream view of Unnamed 3

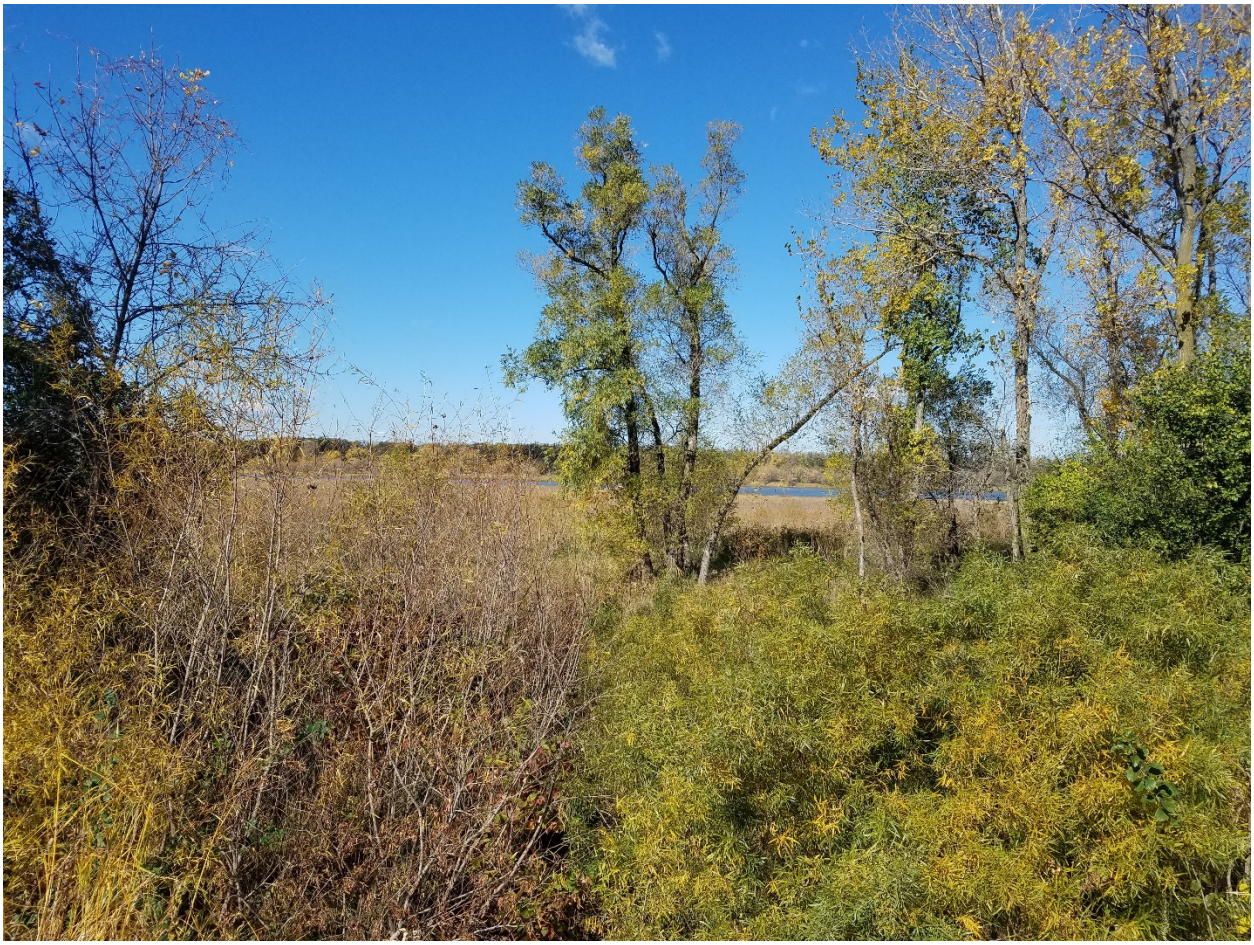

Figure 7. Upstream view of Unnamed 4

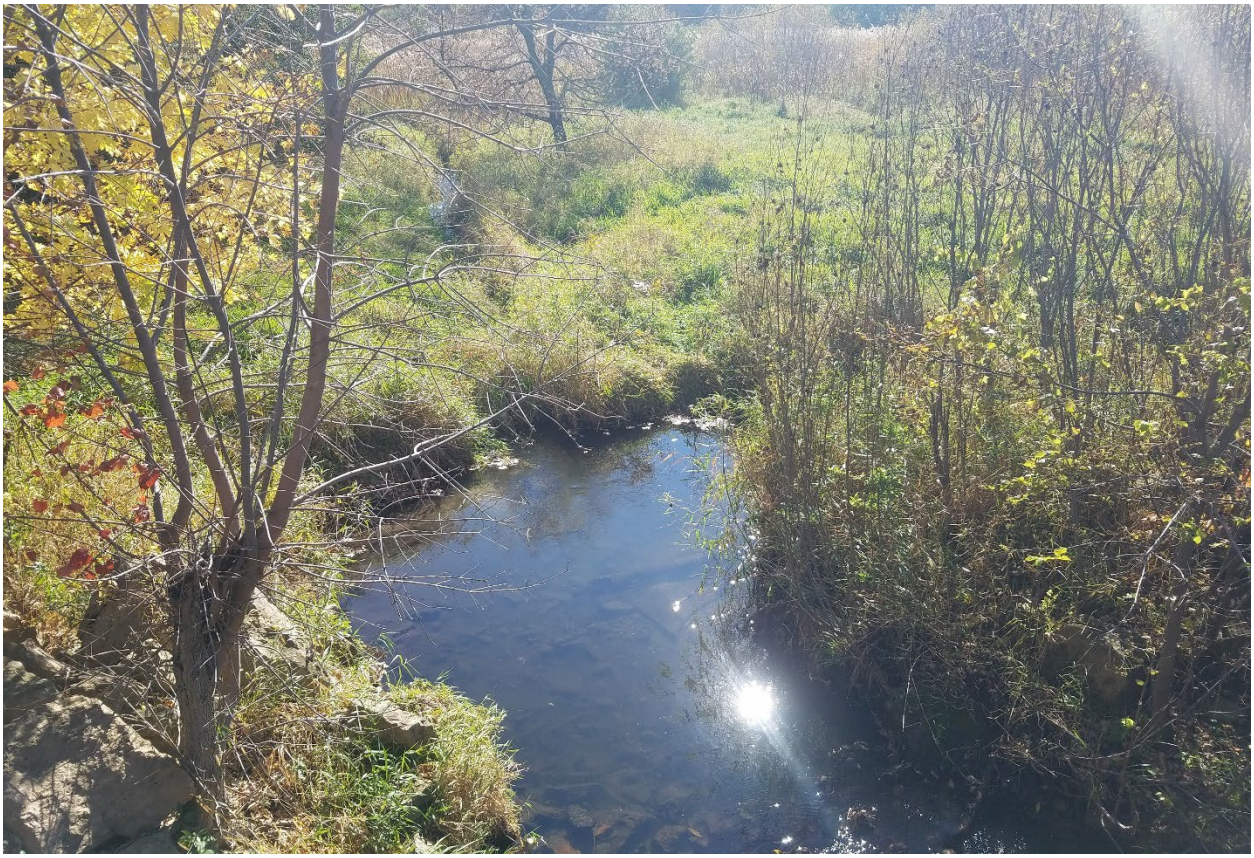

Figure 8. Downstream view of Unnamed 4

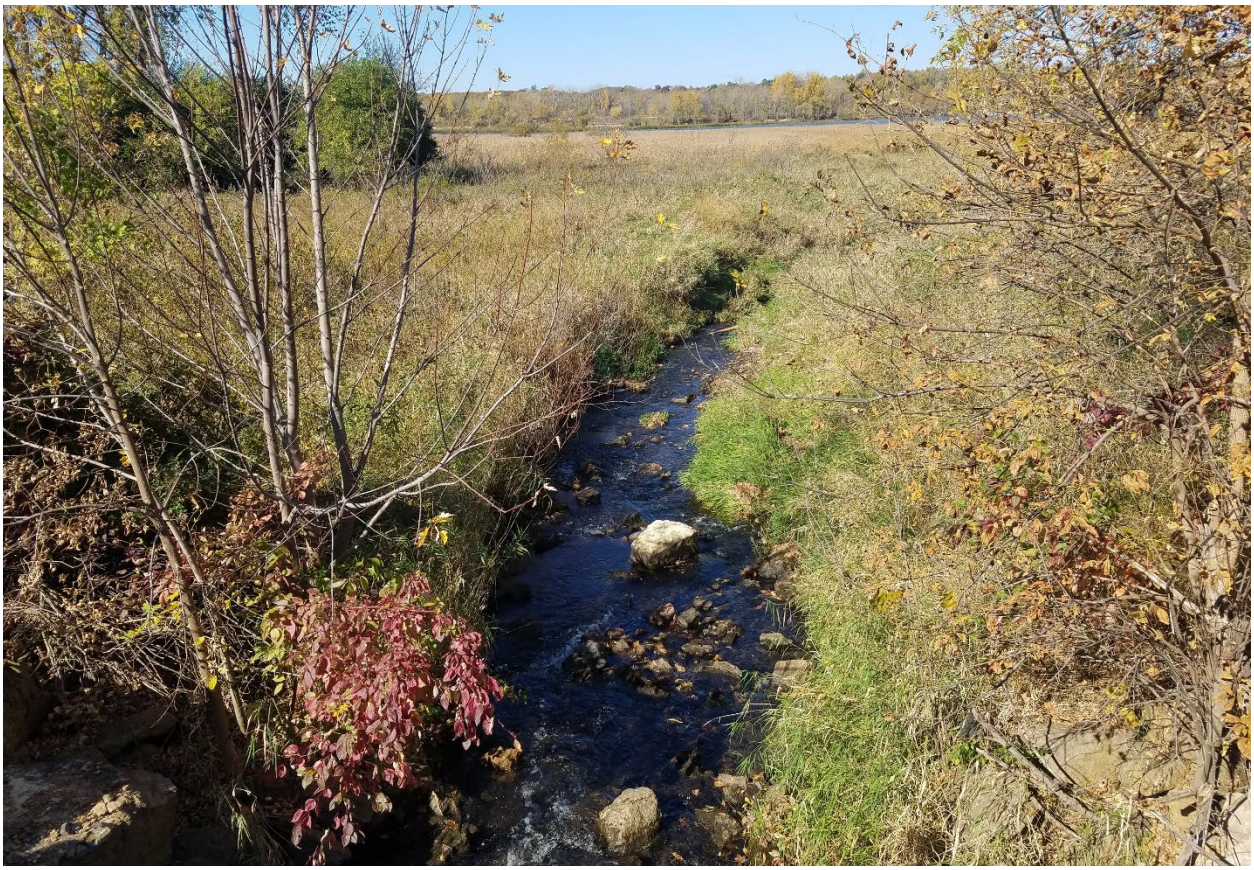

Figure 9. Unnamed 4 tributary, looking upstream

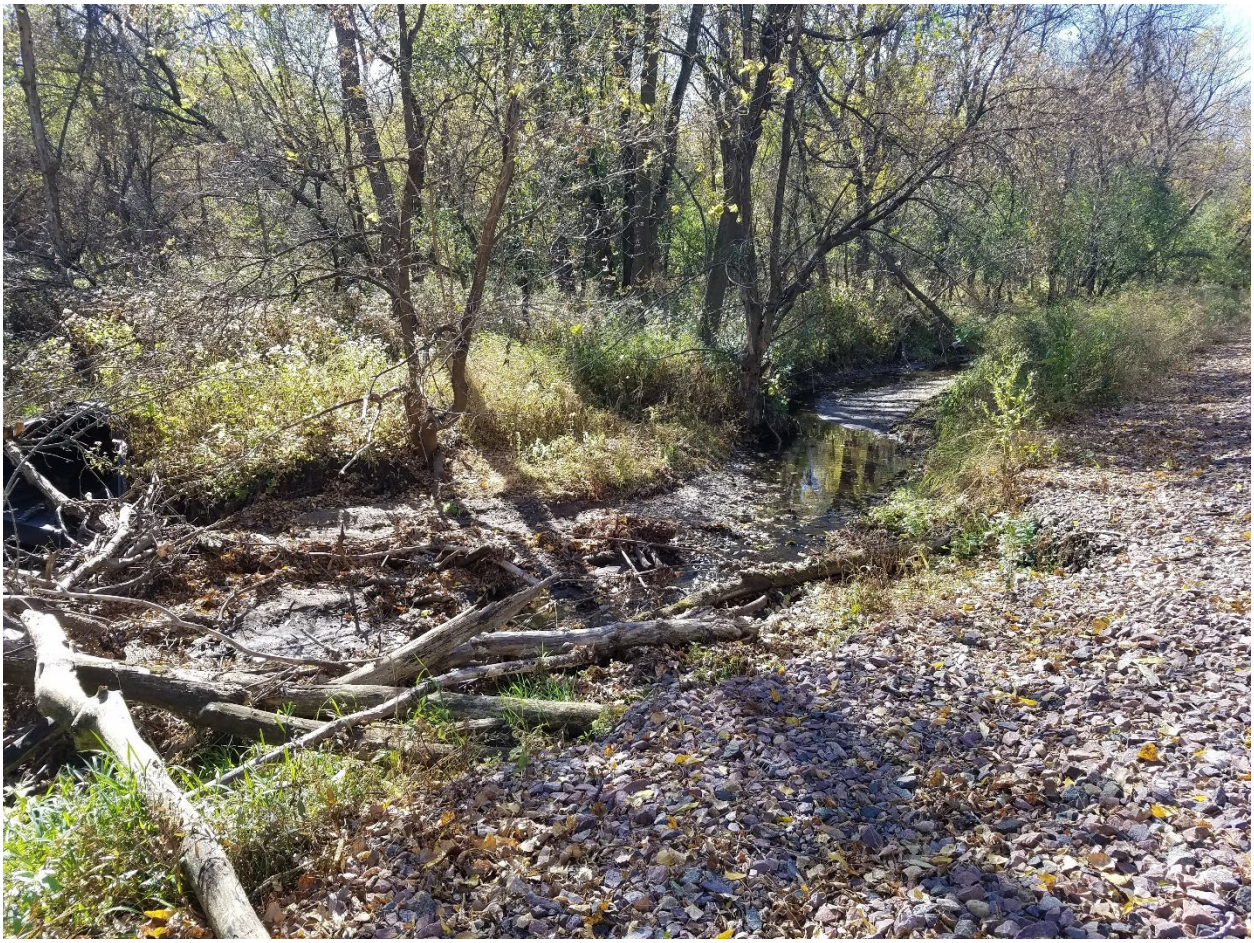

Figure 10. Upstream view of Kennealy's Creek

Figure 11. Downstream view of Kennealy's Creek