United States Department of the Interior

U.S. GEOLOGICAL SURVEY

Upper Midwest Water Science Center

Minnesota Office
2280 Woodale Drive
Mounds View, MN 55112
763.783.3100

Wisconsin Office
1 Gifford Pinchot Drive
Madison, WI 53726
608.828.9901

Michigan Office
5840 Enterprise Drive
Lansing, MI 48911
517.887.8903

March 4, 2024

Village of Elm Grove
13600 Juneau Boulevard
Elm Grove, WI 53122

Subject: Request for permission to install fish cameras on South Park Fields property

To whom it may concern:

I would like to request permission to install a set of long-term fish cameras on near the footbridge at the Village of Elm Grove South Park Fields soccer fields.

To give a little background on this effort, the U.S. Geological Survey (USGS) and Milwaukee Metropolitan Sewerage District (MMSD) are involved in a long-term cooperative study[1]. One goal for this piece of the study is to assess the availability of different stretches of stream to fish migrating up from Lake Michigan in the spring and fall. As I'm sure you're aware, MMSD is restoring many of their stream channels, and removing fish barriers along the way to allow these fish access to the upper reaches of streams in the area for spawning. As I'm sure you're also aware, Elm Grove sits in some of the upper reaches of Underwood Creek. While restoration work has been done downstream of your village, there are still many barriers between your village and the lake, including large stretches of concrete-lined stream that are difficult for these fish to navigate. While they may be able to make that journey on occasion, our expectation right now is that the reaches in your village are largely inaccessible to Lake Michigan fish. Our intent is to establish whatever baseline exists now and see how that compares as time moves forward and more downstream reaches are restored/more barriers are removed. We have 3 fish cameras currently deployed in other areas[2]; all our fish cameras are publicly accessible, and we'd be happy to partner with anyone to help promote their use/exposure. To get a sense of what kinds of images are possible with the equipment we're using, we have posted a video showing images taken downstream at our stream gage on Underwood Creek near Mayfair Road on our website[3].

---

[1] For more details on this project, please visit our website at: https://www.usgs.gov/centers/upper-midwest-water-science-center/science/milwaukee-metropolitan-sewerage-district-mmsd.

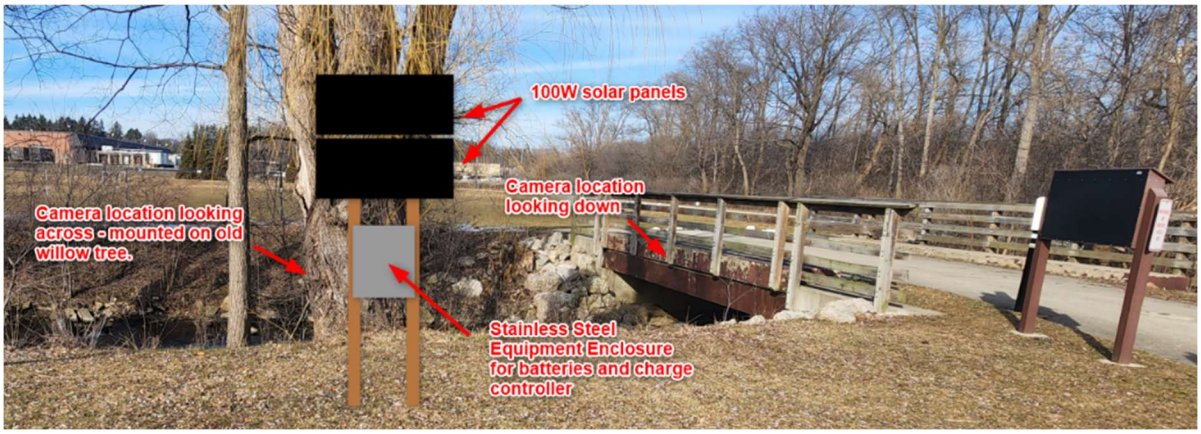
[2] Those camera feeds can be accessed through this site: https://www.usgs.gov/centers/upper-midwest-water-science-center/science/mmsd-watercourse-corridor-study-geomorphology#multimedia.

[3] https://www.usgs.gov/centers/upper-midwest-water-science-center/science/mmsd-watercourse-corridor-study-geomorphology#2a

As mentioned above, we'd like to install a set of cameras near the footbridge connecting the soccer fields and parking lot at South Park Fields (approx. coordinates: 43.036981, -88.068999). Installation would include a structure, like the one shown on the left that powers our streamflow gage and fish camera at Little Menomonee River at Donges Bay Road in Mequon[4]. The structure would house batteries, a modem, and a datalogger. A mockup at the site in question is shown below.

The cameras themselves are relatively small and would be connected to the structure via cable and conduit. As described on the image, we would aim to have two cameras: one camera looking down at the stream at a slight angle (from the willow) to catch any dorsal fins popping out of the water, and one mounted to the bottom of the bridge looking directly down at the stream. Conduit connecting these cameras to the structure would be buried where possible, and then anchored to the willow/bridge as they span the distance between the earthen ground and the cameras.

The site would take approximately a day to install and would be visited occasionally (maybe once every couple of months) by a technician to troubleshoot any issues that arise. In terms of timing, our hope is to get this site installed as soon as possible. We have funding to maintain installation through the end of 2025. That said, we anticipate being able to secure further funding in the future to maintain this site and keep it installed for the long term. That said, if at any point our point we lose funding, or this camera becomes de-prioritized within the project, we will come and remove all our equipment from the property.



Please let me know your thoughts. I'd be happy to answer any questions you might have. Thank you for your consideration.

Sincerely,

Michelle Nott, Physical Scientist

---

[4] https://waterdata.usgs.gov/monitoring-location/04087050/#parameterCode=00065&period=P7D&showMedian=false