Subd. 14.**Ordinary high-water level.**

"Ordinary high-water level" means the boundary of water basins, watercourses, public waters, and public waters wetlands, and:

(1) the ordinary high-water level is an elevation delineating the highest water level that has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial;

(2) for watercourses, the ordinary high-water level is the elevation of the top of the bank of the channel; and

(3) for reservoirs and flowages, the ordinary high-water level is the operating elevation of the normal summer pool.

1.1.2 Mississippi River/Dam 2 Operation

The following figure shows the Operating Curve for Lock and Dam 2 on the Mississippi River. The green curve shows the Control Point in South Saint Paul. This control point is directly across the river from Pigs Eye Lake. The river stage at Pigs Eye Lake is held constant at 686.8 feet NAVD (687.2 (1912 datum) for discharges below 12,500 cfs. At a river discharge of 12,500 cfs, the river stages begin to rise with discharge.

Determining Normal Water Level

Purpose and Considerations

To provide guidance in identifying a Normal Water Level from which a buffer would be measured where there is no definable bank, to determine if adequate buffer is in place and a parcel is compliant with the Buffer Law (Minnesota Statutes §103F.48 (https://www.revisor.mn.gov/statutes/cite/103F.48), Riparian Protection and Water Quality Practices) and consistent with state shoreland standards (Minnesota Statutes §103F.201 (https://www.revisor.mn.gov/statutes/cite/103F.201) – 103F.227 (https://www.revisor.mn.gov/statutes/cite/103F.227)) and Drainage Law (Minnesota Statutes, Chapter 103E (https://www.revisor.mn.gov/statutes/cite/103E)).

According to the Buffer Law buffers shall be measured as follows on a non-103E waterbody:
The width of a buffer must be measured from the top or crown of the bank. Where there is no definable bank, measurement must be from the edge of the normal water level.

According to the Buffer Law "Normal Water Level" is defined as follows:
The level evidenced by the long-term presence of surface water as indicated directly by hydrophytic plants or hydric soils or indirectly determined via hydrological models or analysis.

While the definitions are similar and in some instance may lead to the same point on the landscape (Flowage or Reservoirs as an example) it is important to note the definition of "Normal Water Level" is NOT the same as the Definition of Ordinary High Water level.

It is also important to note that there may be situations when a "Normal Water Level" may be higher on the landscape than an established OHWL. Particularly in an instance when the OHWL was established some time ago and water elevations have changed on a basin for a long enough time to change the vegetation. In these instance it is likely that if the OHWL was re-established it to would reflect the current conditions on site.

Implementation Guidance

Field process for determining Normal Water Level (NWL) in a location where there is no definable bank.

Reservoirs and Flowage

- The NWL is consistent with an OHWL of reservoirs and flowages and is the highest normal summer pool operating elevation described within the operating plan of the reservoir or flowage.
- The NWL is a single elevation and is:
  - The reservoir normal summer pool elevation when specified as a constant for the entire summer.
  - The NWL is the highest operating elevation if the normal summer pool is maintained as a range of elevations.

Basins with Culverts or a fixed Outlet Structure the NWL would be whichever is higher in the landscape

- Guidelines below for Basins with No Outlet Structure.

OR

DEPARTMENT OF NATURAL RESOURCES

Central Region Headquarters
1200 Warner Road
Saint Paul, MN 55106

August 17, 2022

Re: Board of Zoning Appeals (BZA) Public Hearing on Pigs Eye Lake Habitat Restoration Project

Dear Members of the Board of Zoning Appeals:

I understand that the Board of Zoning Appeals, upon conclusion of the public hearing on August 8, 2022, asked City of Saint Paul staff to obtain additional information from the DNR. In an email sent August 11, 2022, DNR received three questions regarding the ordinary high water level (OHWL) of Pigs Eye Lake, Public Water #62-4P.

Ordinary High Water Level of Public Waters

The DNR has broad statutory authority to determine the OHWL of waters of the state (Minn. Stat. § 103G.255 (3)). Minn. Stat. § 103G.005, Subd. 14 defines Ordinary High Water Level (OHWL) as the boundary of water basins, watercourses, public waters, and public waters wetlands. The OHWL is the landward extent of DNR jurisdiction over work in the bed of public waters. It is commonly used by DNR in Public Waters Work Permits and by local land use zoning authorities to determine lot size and structure setbacks. The OHWL is not a runout elevation, which is the elevation at which water leaves a water body. The OHWL is not an average water level. The average water level includes a wide range of water levels that contribute to the average and does not lend itself to long-term reliability. The OHWL is not an extreme high water level or an arbitrary elevation set by an individual, group, or agency.

Question 1. What is DNR's specific classification for Pigs Eye Lake for determining its OHWL? Minn. Stat. Sec. 103G.005, Subd. 14 lists 3 ways the OHWL is determined: Which of the methods was used for Pigs Eye Lake?

Pigs Eye Lake is a public water basin located within the floodplain of the Mississippi River. Pigs Eye Lake is directly connected to the Mississippi River via channels at the Red Rock Barge Terminal and at Hog Lake. Due to these hydraulic connections, the water level of Pigs Eye Lake directly fluctuates with the water level of the Mississippi River. The ordinary high water level of Pigs Eye Lake has therefore been determined to be the same as the ordinary high water level of the Mississippi River.

In accordance with the definition in Minn. Stat. § 103G.005, Subd. 14, the ordinary high water level of the Mississippi River is the elevation of the top of the bank of the channel. Due to dredging, levee construction, riprap, and other river-altering activity, physical evidence of the top of the bank is very limited in the commercially navigable portion of the Mississippi River. Therefore, since 2005 the DNR has used top of bank elevations determined through hydrologic/hydraulic modeling of the 2-year return interval, or 50% annual exceedance flow, because this flow, known as the bankfull flow, has been demonstrated through scientific

studies to be closely associated with river channel formation. DNR's determination is based on the best available information. DNR has consistently used these OHWL determinations for DNR Public Waters Work Permitting on the Mississippi River for nearly 20 years.

Please note that the navigation lock and dams constructed on the Mississippi River, including Lock and Dam No. 1 in St. Paul and Lock and Dam No. 2 in Hastings, are not akin to flood control dams. A flood control dam is a solid structure designed to store extra water in a reservoir during a flood event while lowering water elevations downstream. Examples of flood control dams in Minnesota that create a reservoir include the Leech Lake Dam, Pokegama Lake Dam, and the Sandy Lake Dam. In the case of flood control dams, the OHWL is the highest normal summer pool operating elevation as described within the operating plan of the reservoir. The OHWL of a reservoir is not the highest operating level of a flood control dam because that level would correspond to a flood event, or **extreme high** water level, and not an **ordinary high** water level. Accordingly, the OHWL of a reservoir is defined as the highest normal summer pool operating elevation.

As opposed to flood control dams, the navigation dams on the commercially navigable portion of the Mississippi River, including Lock and Dam No. 2, do not provide any flood control function and do not store extra water in a reservoir. These navigation dams are designed and operated solely to maintain the **minimum water level** necessary for commercial navigation (barges and tows) in the 9-foot-deep navigation channel. Unlike a solid flood control dam, Lock and Dam No. 2 consists of a series of piers across the river with moveable gates between the piers. The gates at Lock and Dam No. 2 are operated during low (i.e., drought) and moderate flows to maintain water levels at the elevation required for navigation. During periods of high flow, the gates are raised completely out of the water allowing the river to flow freely.

The **minimum water level** maintained by Lock and Dam No. 2 at the Primary Control Point at South St. Paul between Lock and Dam No. 1 and Lock and Dam No. 2 is 686.8 feet in the NAVD88 vertical datum or 687.2 feet in the MSL 1912 vertical datum. The minimum water level maintained by Lock and Dam No. 2 at the dam is 686.1 feet in NAVD88. The U.S. Army Corps of Engineers defines these **minimum water levels** as the "project pool elevation."

The assertion that the "project pool elevation" of Lock and Dam No. 2 (686.8 feet, NAVD88 datum) is equivalent to the ordinary high water level of Pigs Eye Lake is **incorrect**. As explained above, the project pool elevation represents the **low** water level of Pigs Eye Lake. The ordinary high water level of any public water must be a **high** water level. It would be unreasonable to conclude that the **low** water level of Pigs Eye Lake is its ordinary **high** water level.

Question 2. What is the OHWL elevation for Pigs Eye Lake as determined specifically by the DNR, how did the DNR reach that determination and when was the determination made?

The OHWL of Pigs Eye Lake, due to the lake's direct hydraulic connection to the Mississippi River, is equivalent to the OHWL of the Mississippi River at Pigs Eye Lake, which is located at River Mile 834. The OHWL of the river at River Mile 834, and therefore the OHWL of Pigs Eye Lake, is 692.9 feet, NAVD88 datum.

In 1983, the Minnesota DNR and the U.S. Army Corps of Engineers entered into a Memorandum of Understanding (MOU) in which the Corps agreed to apply for state permits and coordinate on certain activities in the Corps' channel maintenance program for the federally-managed commercially navigable portion of the

Mississippi River. The original 1983 version of this MOU contained state permit elevations that were determined by the U.S. Army Corps of Engineers. Between Lock and Dam No. 2 in Hastings and Lock and Dam No. 1 in St. Paul, these permit elevations ranged from 687.2 feet to 695.4 feet (MSL 1912 datum).

In 1994, DNR began a multi-year effort to carefully re-evaluate the permit elevations in the MOU to meet Minnesota's statutory definition of the OHWL. The effort included evaluation of the navigation lock and dam system, hydrologic/hydraulic modeling, and field verification. In 2005, the DNR's primary Public Waters Work Permit governing the Corp's channel maintenance activities was amended to include the DNR-determined OHWL elevations. This permit and associated MOU must be reviewed and extended every 5 years in accordance with Minn. Stat. § 103G.315, Subd. 13.

Since 2005, DNR has used these DNR-determined OHWLs for permitting all projects in the commercially navigable portion of the Mississippi River, including, for example, a 2008 permit authorization for several improvements below the OHWL at Harriet Island Park in St. Paul, and a 2015 permit authorization for installation of a new hopper barge mooring cell at CHS, Inc.'s facility located immediately east of the Lafayette Bridge in downtown St. Paul.

Question 3. How often is the OHWL reviewed/reestablished and are there criterion used to evaluate whether an established OHWL must be reviewed, adjusted or redetermined?

Re-examination of prior ordinary high water level determinations are completed by DNR on an as-needed basis when and where there is substantial supporting evidence to justify re-examination. At this time, DNR sees no reason for re-examination of the ordinary high water levels used on the Mississippi River, including at Pigs Eye Lake.

Conclusion

The OHWL of Pigs Eye Lake is 692.9 feet, NAVD88 vertical datum. This elevation is DNR's jurisdictional boundary for the basin. The ongoing habitat restoration project in Pigs Eye Lake is authorized by DNR Public Waters Work Permit #2020-1818 and consists of fill placed entirely below the ordinary high water level. The filling has been authorized by DNR for fish and wildlife habitat purposes only; these islands are not authorized for the purposes of creating upland for development subject to local land use regulations. Sincerely,

Dan Scollan

Dan Scollan
East Metro Area Hydrologist

ANALYSIS AND FINDINGS

1. Appellant contends the Administrator failed to apply Mississippi River Corridor Critical Area ("MRCCA") rules to the Project. The City's MRCCA jurisdiction is established by law. This jurisdiction is typically applied to development on land that takes place above the Ordinary High Water Level ("OHWL").

The OHWL is defined as "the boundary of water basins, watercourses, public waters, and public waters wetlands, and . . . is an elevation delineating the highest water level that has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial." Minn. Stat. § 103G.005, subd. 14(1). The OHWL elevation is determined and established by the DNR.

In order to issue a stop work order, there must be underlying authority to authorize the action. In evaluating Appellant's request, the Administrator concluded that the Project lies within the DNR's jurisdiction over public waters because the Project takes place below the elevation of the OHWL and was therefore outside of the City's jurisdiction under MRCCA. This conclusion was based in part in consultation with the DNR's East Metro Area Hydrologist who estimated that the OHWL for Pigs Eye Lake at 692.9 feet. The Administrator also consulted with the USACE to determine the elevation of the Project's islands. The USACE advised that the elevation of the constructed islands will be 692.6 feet.

Based upon these estimations, the Administrator reasonably concluded that the Project's islands are below the OHWL and therefore within the basin of Pigs Eye Lake which is within the DNR's regulatory jurisdiction and outside of the City's jurisdiction. The 692.9 OHWL elevation reasonably defines the jurisdictional boundary of the DNR's "public waters" permit authority. As a designated public water, permitting authority over work in in the lake which is taking place below the OHWL of this designated public water is specifically vested in the DNR. See, Minn. Stat. § 103G.245, subd.1(2) ("a political subdivision of the state [in this case, the Ramsey County Parks Department] . . . must have a public-waters-work permit [to] change . . . the . . . cross section of public waters, . . . by any means, including filling, excavating, or placing of materials in or on the beds of public waters."). Minn. Stat. § 103G.245, subd.1(2) clearly does not contain language giving the City additional permitting authority – or, by inference – any regulatory authority to issue "stop work orders." While the Appellant has also argued that Minn. Stat. § 103G.245, subd. A allows work in public waters to be delegated to local unit of government, the DNR has never delegated its public water work permit authority to the City under Minn. Stat. §103G.245, subd. A.

The County [and the USACE] obtained a public waters work permit as required under Minn. Stat. § 103G.245, subd.1(2). Because the Project work is being performed within a public water and below the OHWL elevation of the lake, there is no additional permitting required from the City for the Project which would form a basis for issuing a stop work order under Minn. Stat. § 103G.245.

Likewise, there is no authority under MRRCA for the City to issue a stop work order. Generally, the DNR approves MRRCA regulations proposed by municipalities with land within the MRCCA. See, Leg. Code § Sec. 68.101(a) (the intent and purpose of Leg. Code Chap. 68 establishes a "River Corridor Overlay District . . . designed to provide comprehensive floodplain and river bluff management for the city in accordance with the policies of Minnesota Statutes Chapters 103 and 116G, Minnesota Regulations and Governor's Executive Order No. 79-19."). The City's current MRCCA regulations, codified under Leg. Code Chap. 68 have been approved by the DNR. The City is in the process of updating Leg. Code Chap. 68 and is working with the DNR to develop new MRCCA ordinances. However, the existing MRCCA ordinances remain effective until the City adopts a new MRCCA ordinance.

The purpose of MRCCA regulations is generally to regulate development on lands above the OHWL. See, Leg. Code § 68.102(a) ("This chapter shall apply to all lands within the city shown on the river