



April \_\_, 2020

Colonel Aaron W. Reisinger  
District Commander  
U.S. Army Corps of Engineers, Chicago District  
231 South LaSalle Street, Suite 1500  
Chicago, Illinois 60604

RE: City of Manitowoc and Central Brown County Water Authority Joint Request for a Sec. 14 Feasibility Study — Emergency Shore Protection Project at Lake Michigan in the City of Manitowoc.

Dear Sir,

In accordance with the provisions of Section 14 of the Flood Control Act of 1946, as amended, the City of Manitowoc (City) and Central Brown County Water Authority (CBCWA) are requesting the U.S. Army Corps of Engineers assistance in addressing shoreline erosion problems at Lake Michigan in the City of Manitowoc, Wisconsin. More specifically, the eroding lakeshore threatens City of Manitowoc assets located along the City's entire length of Lake Michigan shoreline, and CBCWA assets located from a point south of the mouth of the Little Manitowoc River north to the intersection of Memorial and Johnston Drives.

The City of Manitowoc, with a population of approximately 34,000 residents, has over 27,000 l.f. or 5.22 miles of shoreline along Lake Michigan. Along this vast length there are areas with infrastructure that are in danger of being destroyed due to erosion caused by wave action from the high water levels. Some examples of this occurred in 2019 when a spring storm caused large waves which damaged the City owned car ferry dock and associated infrastructure. The dock is a port location for the S.S. Badger car ferry; a wood dock wall, counter weight and black top approach to the loading apron were damaged and needed to be repaired before the sailing season. Costs to repair the damage was in excess of \$4.5M. In addition to the repairs to the car ferry dock a navigation beacon, which was located on the south breakwater/pier was hit by a wave and ripped off the breakwater falling to the lake bottom.

The Manitowoc Wastewater Treatment Plant has also experienced damage to their facility which is located at the mouth of the Manitowoc River. There are two main concerns for the Wastewater Treatment Facility. First, is the 60" Influent Sanitary Sewer that transports all of the wastewater from the City runs adjacent to the south breakwater/pier. If the Pier is compromised, what is the state of the

soil/ground surrounding the nearby 60" Sanitary Sewer? There is not a second means of transporting all of the wastewater from the City for treatment at the WWTF. The second priority concern is the High Voltage electrical power that runs even closer to the south pier. The electrical power that supplies the North end of the WWTF consists of two lines carrying 13,200 volts to two mounted transformers. They provide power to the headworks building which houses the main influent pumps to pump water into the facility. Potential pier collapse could compromise this source of power. Wastewater would not be pumped into the facility flooding out the downtown and beyond.

The damage to the south breakwater/pier has been ongoing since 1992. The recent high water levels and intense wave action has led to cracks and undermining of the pavement on the North end of the WWTF adjacent to the south breakwater/pier.

Other critical areas that the City of Manitowoc needs to protect are in the area north of the Manitowoc River to the northerly city limits. The City and WisDOT have a street corridor (Maritime Drive and Memorial Drive/S.T.H 42) that run parallel with the shoreline. In this corridor there are also utilities (CBCWA explained below, fiber optic, sanitary and storm sewers) and Mariners Trail which is a public recreational trail that are currently being compromised due to the erosion. The trail is located between the shoreline and street corridor. A portion of the recreational trail crosses property owned by the YMCA, a non-profit entity which is trying to find resources to protect the trail and their facility. The trail, utilities and street infrastructure are one storm away from being damaged. For example a single 2019 storm eroded 15 to 20 feet of shoreline which damaged the car ferry dock facility. If a similar event would occur again the City and CBCWA would lose streets, trails, utilities, waste water treatment plant services and the CBCWA water supply.

Manitowoc Public Utilities (MPU), owned by the City of Manitowoc, has numerous water and power utility assets along the Lake Michigan shoreline. One area of immediate concern is the Collector C groundwater well located on the southern end of the City. High water levels are eroding the sand bluff near the groundwater well.

There are other locations which are experiencing erosion but there are no improvements in dire need of protecting at this time. The City has created a GIS map site which inventories existing erosion at critical locations along the shoreline, to access the GIS map go to the following link:  
<https://storymaps.arcgis.com/stories/9986af8c75da4170a5594f7ba13293ae>

CBCWA is the wholesale provider of drinking water for six municipalities in the Green Bay metropolitan area including the City of De Pere, the Villages of Howard, Allouez, and Bellevue, and the Towns of Ledgeview and Lawrence. CBCWA serves approximately 86,000 residents including 26,600 homes and 2,400 businesses. Treated Lake Michigan drinking water is transported to the service area via a single 48-inch diameter transmission main. A portion of the CBCWA transmission main runs along the Lake Michigan shoreline and was originally constructed at a depth and distance from the shoreline expected to provide adequate separation from erosive forces under typical ranges of lake level and seasonal precipitation.

The record high amounts of precipitation combined with the near-record level of Lake Michigan now being experienced in Manitowoc have rapidly eroded any previously existing shoreline protection. The transmission main in these locations is now vulnerable to destabilization of the supporting materials and damage to the pipe itself. This thin-walled steel pipe with a mortar liner depends on the stability of the surrounding fill to maintain structural integrity. In the most severely eroded locations, the pipe may

already be experiencing damage. If the transmission main breaks or is shut down for extended repairs, the six CBCWA members will be forced to rely on their groundwater wells which were the subject of Wisconsin Department of Natural Resources noncompliance orders due to harmful levels of radium and arsenic.

The City and CBCWA are fully aware that under this authority, the Corps will conduct a feasibility level investigation consisting of a Determination of Federal Interest Report and Detailed Project Report. We understand that the first \$100,000 of the feasibility phase will be funded by the Federal government and that remaining expenses will be cost-shared 50 percent Federal and 50 percent non-Federal. Of this 50 percent share, the City and CBCWA will adopt a project partnership agreement and may provide the entire non-Federal share through in-kind services.

It is understood that, if an emergency shore protection project is found feasible and advisable, the City and CBCWA would be required to provide the local cooperation and cost sharing requirements as determined in their adopted project partnership agreement and as prescribed by the Secretary of the Army in order to move forward with design and implementation.

The City and CBCWA are aware that this letter serves as an expression of non-Federal intent to cooperate with a Feasibility Study and is not a contract obligation. The City and CBCWA look forward to further discussion of this potential project.

Sincerely,

Mayor Justin M. Nickels  
City of Manitowoc

President Sarah K. Burdette  
Central Brown County Water Authority