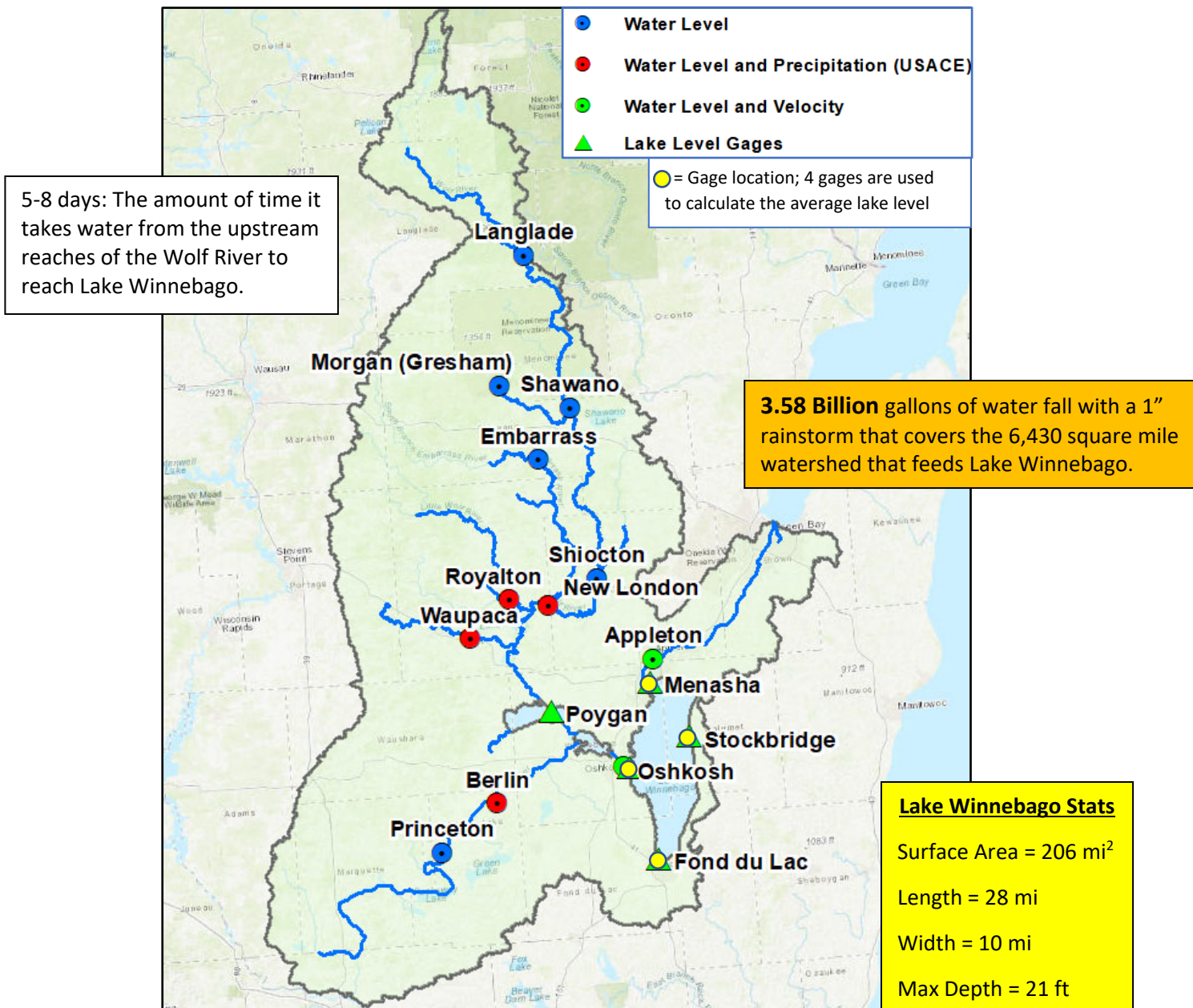


District Mission: Flood Risk Management (Added Benefits: Hydro Power and Navigation)

- The Locks and Dams were constructed in the 1850's for **navigation** purposes.
- In 1872, USACE took ownership of the locks and dams and was authorized to operate and maintain the structures for navigation.
- The **Marshall Order** was established in 1886 to "maintain the level of Lake Winnebago at or below" flood stage, and above the crest of the dam which retains that pool. The term "flood" is to be considered to refer to all stages of water above an ordinary high-water stage.
- The 3-foot 6-inch upper limit specified is 21-1/4 inches above the spillway crest of Menasha Dam. This was determined by the mean annual high-water stage for the 28-year period from 1859 to 1886. Today we operate to keep the level within the limits set by the **Marshall Order**.
- The **Linde Plan** is also used as guidance for habitat protection on management practices within the bounds of the Marshall Order.
- Hydroelectric production on the Lower Fox River accounts for around 33% of electricity used in the Fox Valley. Without flow in the Lower Fox River that electricity needs to be produced by other means, causing higher rates and/or blackouts. Large fluctuations in flow on the Lower Fox River reduce the efficiency of hydroelectric production and lead to flooding and environmental damage on the Lower River.



*Oshkosh Datum is the height relative to the spillway crest elevation at the Menasha Dam. The crest elevation of the dam is equal to 1.68'. The summer pool level of 2.9' is equal to 1'-2 5/8" above the dam crest

FALL DRAWDOWN

Fall drawdown of the lake has historically began on September 1st. In more recent years, the drawdown has officially begun on October 1st. This was based on input received from stakeholders to allow for more recreation use of the lake in September. A gradual drawdown is done based upon the input from the DNR for habitat protection.

WINTER POOL

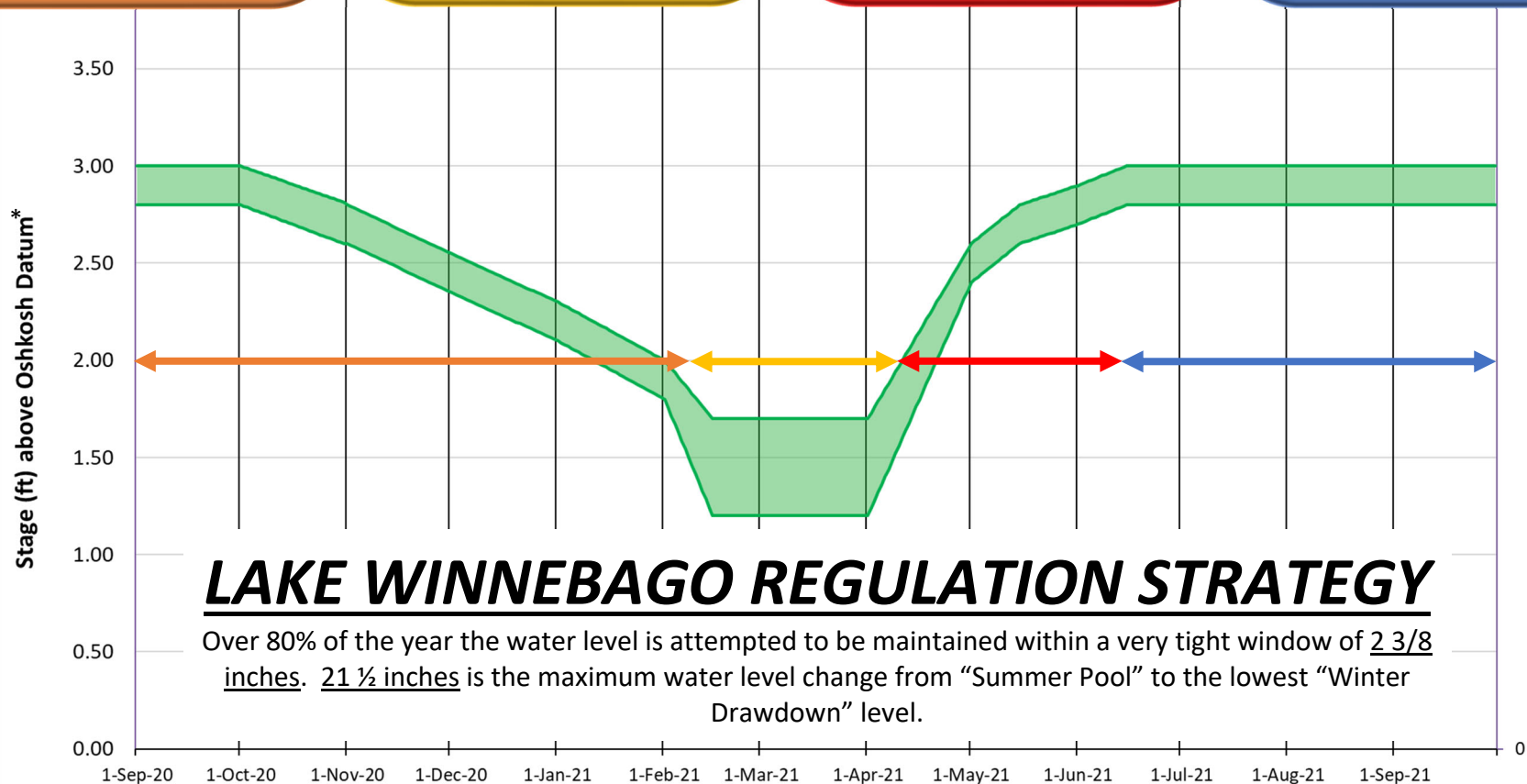
In January/February, basin conditions (snow pack, soil conditions, river levels, etc.) and the spring weather outlook are reviewed. A drawdown target is agreed upon with stakeholders and held until ice-out is achieved. This is done to mitigate springtime flooding, ice-shoves, and shoreline erosion. "Ice-out" has occurred anywhere from March 17th to April 20th in the past 15 years.

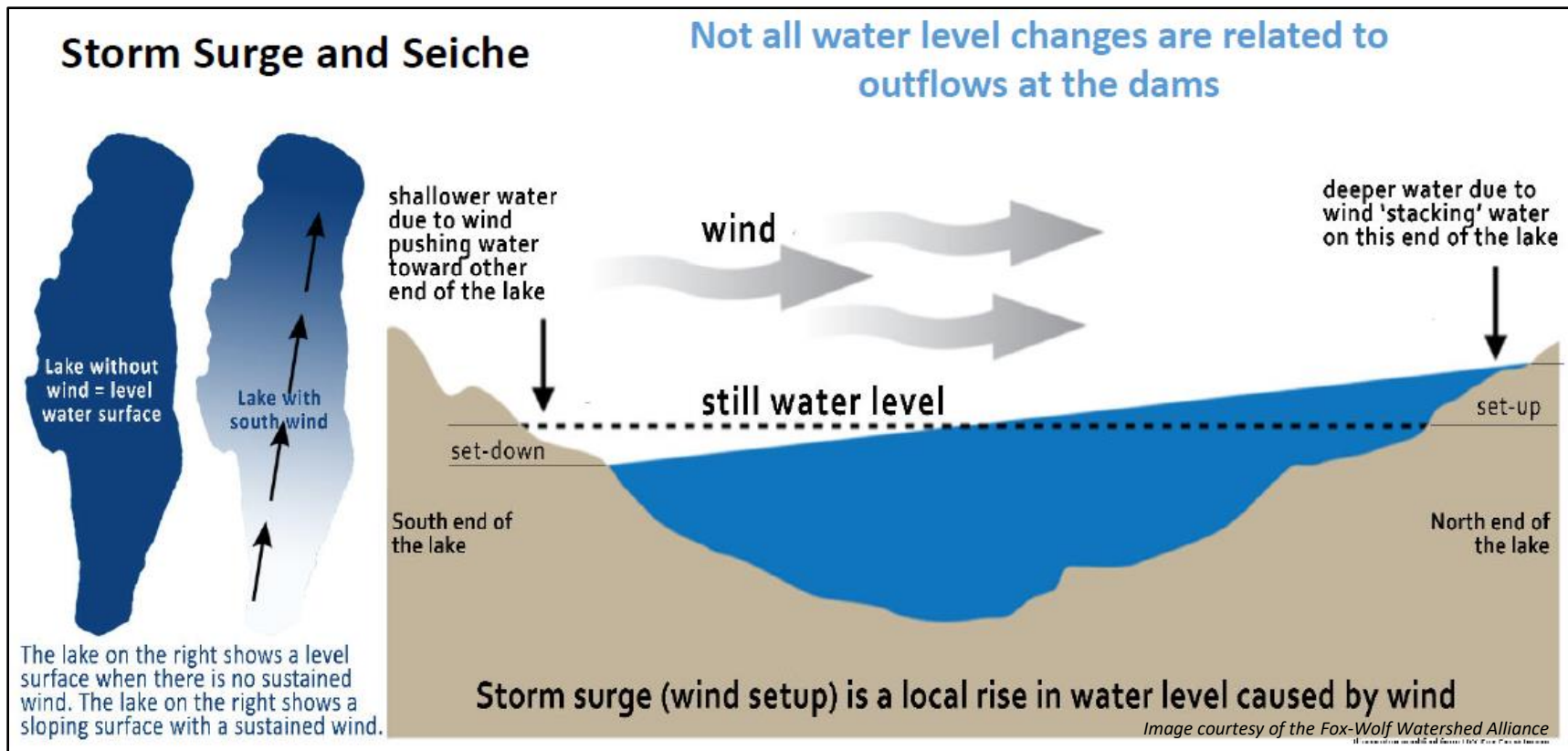
SPRING FILL

The spring fill is attempted to be done at a slow, gradual rate which are key components for improving water quality and habitat. Spring rainstorms can often pop-up and/or be more intense than expected. Therefore, to the best of our ability, the lake is maintained within the strategy band. A target of 2.5 is set for May 1st with another gradual increase to 2.9 by June 15th.

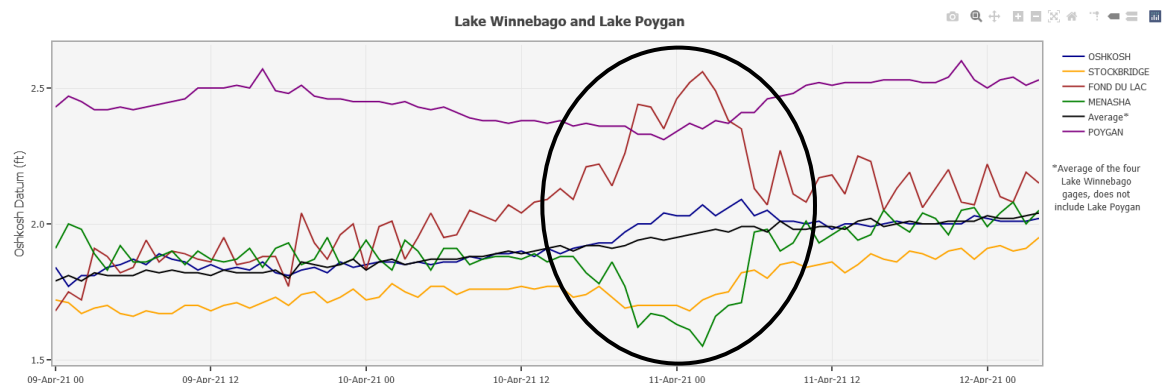
SUMMER POOL

Once summer pool is achieved it is held, to the best of our ability, within the strategy band. As summer storms occur, gate movements are made in effort to maintain the level within the strategy band. Gradual flow changes are made throughout the regulation year. Large flow changes cause localized flooding, erosion, and ecological damage on the Lower Fox River





It is not uncommon for there to be a 1 foot water level difference between the North and South shore gages when winds exceed 15mph (see graph below). With ice on the lake a wind driven seiche effect is the cause of ice shoves that make the local news and remove homes from their foundations (refer to photograph). Without lower winter and early spring water levels, damaging ice shoves are more likely.



Oshkosh Datum and Menasha Dam Spillway Crest

Oshkosh Datum relates to the crest elevation of the dam = 1.68'
The 4 gates around the lake are set to this elevation datum

