

## MEMORANDUM

On Thursday, May 17 a public information meeting was held regarding the capacities of the dams and the stormwater flows into Okauchee Lake, Oconomowoc Lake and Lac La Belle. The meeting was a result of the Mayor's pledge to concerned residents to have the dam owners inform the public of our operations and why flooding was experienced in 2008 and 2010. The majority of the 25 people in attendance were from the Lac La Belle area. The information below is based on Lac La Belle as that is the one that concerns the City.

Rob Davy, Lake Country Engineering, provided information regarding the amount of water that flows into the lakes and the discharge capacities of the dams. When water flows are discussed, the unit of measure used is cubic feet per second (CFS) because of the very large numbers involved. As an FYI, 1 CFS is equal to about 450 gallons per minute. It is better not to get confused with the units but look at how the numbers compare to each other. The figures used in this memo are for a 100-year rain event.

Rob's numbers regarding La Belle are interesting and explain why it fills easily and drains slowly. Although we are the third lake in a three lake chain, the dam for Oconomowoc Lake is the limiting factor for the flows sent to Fowler/La Belle. The Okauchee Lake dam is able to discharge 500-800 CFS to Oconomowoc Lake, but the smaller dam on this lake will only discharge 65 CFS. In essence, the volume being discharged from Okauchee has limited impact to La Belle.

The 65 CFS flow from Oconomowoc Lake when added to the drainage from the City area around Fowler Lake total 600 CFS. This water goes over the North Lake Road dam into La Belle. The drainage from lands in the Town of Oconomowoc and Village of Lac La Belle add another 600 CFS and Rosenow Creek provides 400 CFS. The total of the three sources is 1600 CFS.

The La Belle dam has a discharge capacity of 250 CFS during the 100-year rain event. With 1600 CFS coming in and only 250 CFS going out it is easy to see why the lake fills. The other problem with discharge from La Belle is the minimal change in elevation between our dam and where the water enters the Rock River. Calculations indicate that the elevation only drops one foot for every mile of river which is very flat. This has a significant impact on La Belle's ability to drain. The problem is amplified when the Rock River is also full.

In summary, during a 100-year rain event:

- 1600 CFS enters La Belle
  - 600 CFS for Fowler and upstream
  - 600 CFS drains from the Town and Village
  - 400 CFS comes from Rosenow Creek
- Only 250 CFS can pass through the La Belle dam
- Limited change in elevation between La Belle and the Rock River negatively impacts the drainage from the lake
- Flooding in 2008 and 2010 were the result of the extreme rain events and not dam operations
- Similar rain events will have the same impacts
- The DNR reported that the National Oceanic Atmospheric Administration (NOAA) projects that we are in a weather pattern that will produce large rain events.