Flood Control Dams versus Low Head Dams (run-of-river dams)

Flood Control Dams are designed with reservoirs to prevent floods downstream by holding and regulating the flow during flood events. Examples of Flood Control Dams would be Saylorville Lake, Lake Red Rock and Coralville Lake. At these locations, the United States Army Corps of Engineers monitor upstream river levels and flows to determine how much water to release downstream to balance flows during different weather conditions, such as decreasing the flow by holding back water during heavy rainfall and releasing more water during droughts. These reservoirs are designed to hold large flood events. However, when flood events become too large and the reservoir gets full, the water will go over the emergency spillway and at that point in time, however much water enters the reservoir will leave the reservoir downstream. We have had a couple of examples in 1993 and 2008 when those reservoirs could not hold back any more water and had to release the water at the same rate that was entering. This would be similar to filling a bucket up with water with a hose. Once the bucket is full, the amount of water entering the bucket is the same as what is leaving the bucket.

Low Head Dams, like the Little Dam and the Hydroelectric Dam, are designed to hold back the same amount of water at all times. In the Little Dam's case, it was designed to pool a certain amount water so that water could be used for cooling at a nearby power plant. The Hydroelectric Dam was designed to hold back water so the elevation difference between upstream and downstream could turn electric turbines and create energy. In both situations, the dams no longer serve their intended purposes. In flooding situations, neither dam provided any flood protection downstream, as their reservoir buckets were always full and whatever water coming to the dam, went over the dam and downstream. Removing these dams will however reduce the flood elevations upstream. After the Hydroelectric Dam in particular is removed, FEMA will conduct a river model and several properties upstream of the Hydroelectric Dam that are currently in the 100-year floodplain may no longer be required to buy flood insurance.

To summarize, removing the Little and Hydroelectric Dams does not impact flooding downstream and can reduce the chances of flooding upstream. That will be determined following a FEMA river model study. The removal of the dams will also reduce the occurrence of ice jams.