



University of Wisconsin-Stevens Point and University of Wisconsin - Extension

University of Wisconsin-Stevens Point
College of Natural Resources
800 Reserve Street • Stevens Point, WI USA 54481

November 28 2011

Ms. Jean McCubbin, President
Pleasant Lake Management District
P.O. Box 230
Coloma WI 54930

Dear Ms. McCubbin:

This letter conveys the results of groundwater flow modeling for the proposed Richfield Dairy wells at a pumping rate of 131.2 million gallons per year. The procedures for this modeling were similar to those previously described in my October 7 2011 letter to Eric Ebersberger of the Wisconsin Department of Natural Resources. The difference is that a pumping rate of 131.2 million gallons per year instead of 52.5 million gallons per year is being evaluated.

Water table drawdown

Figure 1 shows the water table drawdown associated with 131.2 million gallons per year of pumping. In the vicinity of Pleasant Lake, the drawdown amounts to 5.6 inches. Drawdowns are substantially more severe under the 131.2 million gallon per year scenario than under the 52.5 million gallon per year scenario (compare Figure 1 with Figure 3 in the Ebersberger letter), about 3.7 inches more at Pleasant Lake. Note that the drawdowns projected here are *on top of the existing irrigation drawdowns*, estimated at 1.5 feet on average at Pleasant Lake.

Streamflows

Figure 2 is a map of the "baseflow reduction index" (BRI), or what percentage of flow the pumping at 131.2 million gallons per year would divert from local streams *on top of existing irrigation pumping diversions* (see the Ebersberger letter, Figure 2). Again, the effects are substantially greater at 131.2 million gallons per year compared with 52.5 million gallons per year.

If you have any questions, feel free to contact me at 715-346-2984.

Sincerely,

/ s /

George J. Kraft, Ph.D, PH

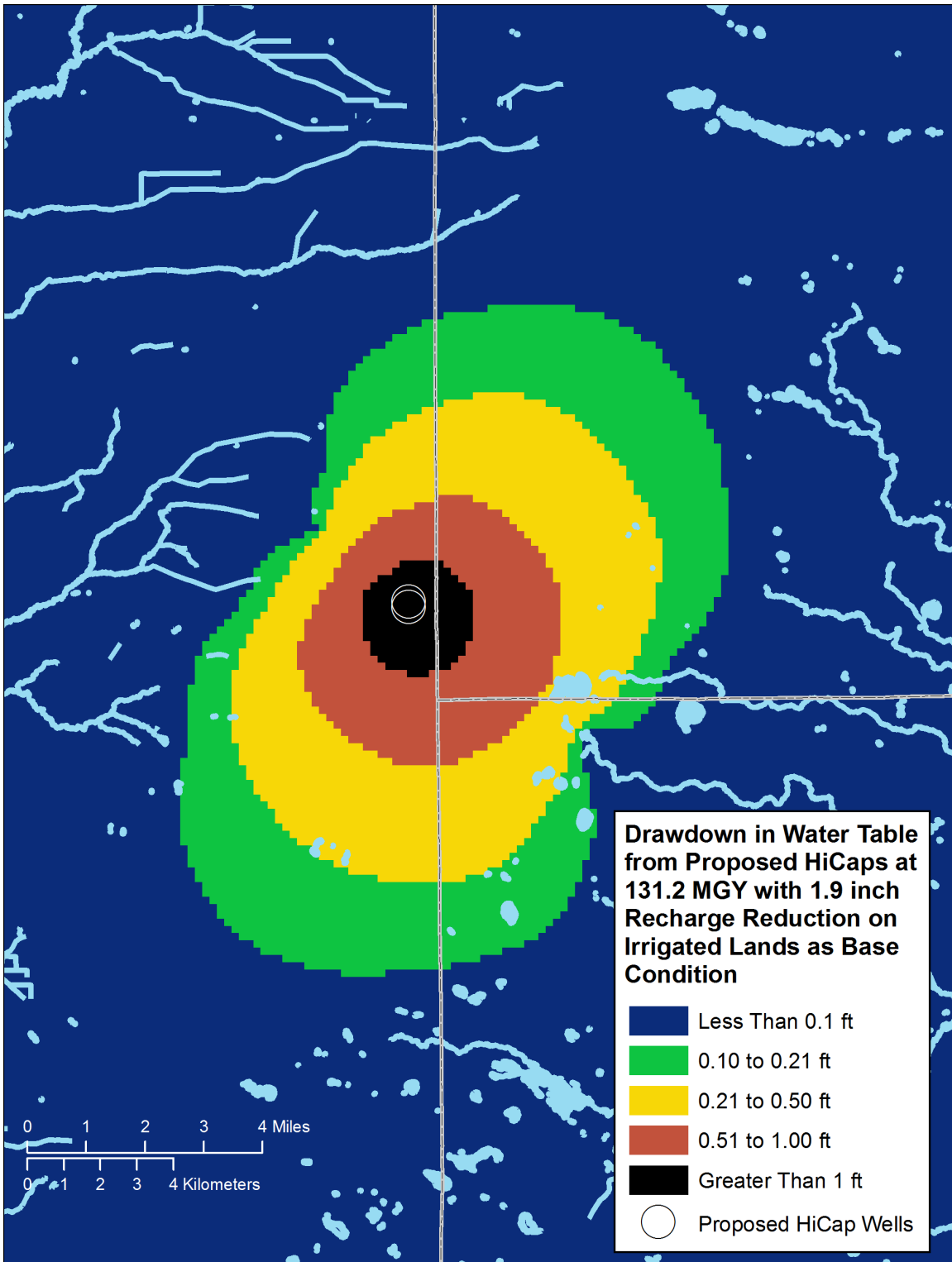


Figure 1. Water table drawdown from proposed Richfield wells pumping at 131.2 million gallons per year at steady-state. This drawdown is on above what current irrigation drawdowns in the area are.

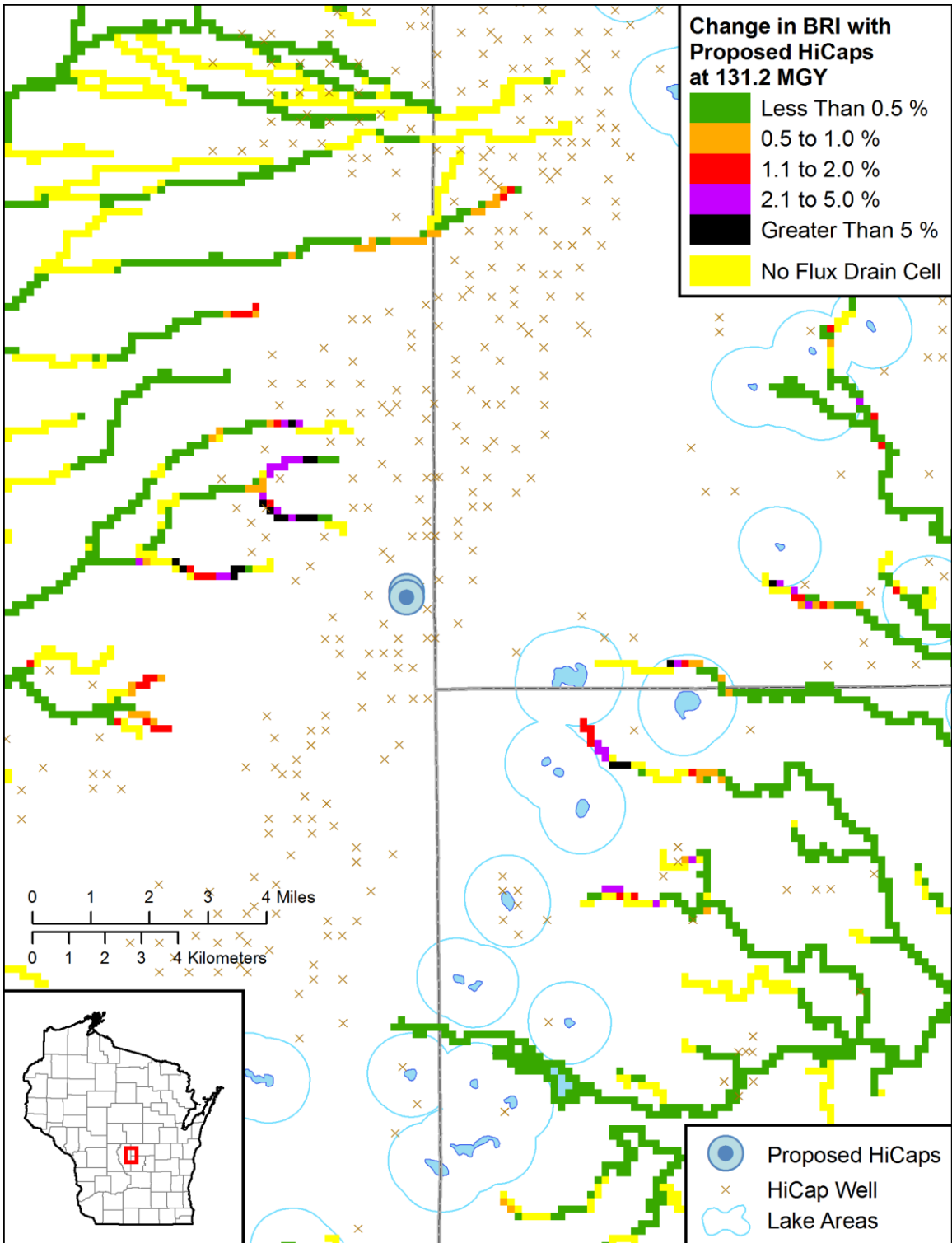


Figure 2. Increase in Baseflow Reduction Index over present baseflow reductions due to proposed Richfield wells pumping at 131.2 million gallons per year.